ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2002–0037; FRL–9298–7]

RIN 2060–AN33

National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production. The proposed rule would establish emission standards for hazardous air pollutants from polyvinyl chloride and copolymers production located at major and area sources. The proposed rule includes requirements to demonstrate initial and continuous compliance with the proposed emission standards. EPA is proposing standards that would apply at all times, including during periods of startup, shutdown, and malfunctions. The proposed standards also include continuous monitoring provisions and recordkeeping and reporting requirements.

DATES: *Comments.* Comments must be received on or before July 19, 2011. Under the Paperwork Reduction Act, comments on the information collection provisions are best assured of having full effect if the Office of Management and Budget (OMB) receives a copy of your comments on or before June 20, 2011.

Public Hearing. We[1] will hold two public hearings concerning the proposed polyvinyl chloride and copolymers (PVC) production rules in the Houston, Texas area, and in Baton Rouge, Louisiana. Persons interested in presenting oral testimony at either public hearing should contact Ms. Teresa Clemons at (919) 541–0252 or at *clemons.teresa@epa.gov* by May 31, 2011. If no one requests to speak at the public hearings by May 31, 2011, then the public hearings will be cancelled without further notice. We will specify the date and time of the public hearings on *http://www.epa.gov/ttn/atw/pvc/pvcpg.html.*

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2002–0037 by one of the following methods:

- *http://www.regulations.gov.* Follow the on-line instructions for submitting comments.
- *http://www.epa.gov/oar/docket.html.* Follow the instructions for submitting comments.
- *E-mail: a-and-r-Docket@epa.gov.* Attn: Docket ID No. EPA–HQ–OAR–2002–0037.
- *Fax:* (202) 566–9744. Attn: Docket ID No. EPA–HQ–OAR–2002–0037.
- *Mail:* By U.S. Postal Service, send your comments to: EPA Docket Center, EPA West Building (Air Docket), U.S. Environmental Protection Agency, Mail Code: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attn: Docket ID No. EPA–HQ–OAR–2002–0037. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th St., NW., Washington, DC 20503.
- *Hand Delivery*: By courier, deliver your comments to: U.S. Environmental Protection Agency, EPA Docket Center, EPA West Building (Air Docket), Room 3334, 1301 Constitution Ave., NW., Washington, DC 20004, Attn: Docket ID No. EPA–HQ–OAR–2002–0037. Such deliveries are only accepted during the normal hours of operation (8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays), and special arrangements should be made for deliveries of boxed information.

Instructions: All submissions must include agency name and docket number or Regulatory Information Number (RIN) for this rulemaking. Direct your comments to Docket ID No. EPA–HQ–OAR–2002–0037. EPA's policy is that all comments received will be included in the public docket and may be made available online at *http://www.regulations.gov*, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI), or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI, or otherwise protected through *http://www.regulations.gov* or E-mail. The *http://www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an E-mail comment directly to EPA without going through *http://www.regulations.gov*, your E-mail address will be automatically captured and included as part of the comment that is placed in the public docket, and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment, and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties, and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at *http://www.regulations.gov*.

Docket: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2002–0037. All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically at *http://www.regulations.gov*, or in hard copy at the EPA Docket Center, EPA West Building (Air Docket), Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: Ms. Jodi Howard, Sector Policies and Programs Division (E143–01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; Telephone number: (919) 541–4607; Fax number: (919) 541–0246; E-mail address: *howard.jodi@epa.gov.*

SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. Several acronyms and terms are used in this preamble. While this may not be an exhaustive list, to ease the reading of this preamble and for reference purposes, the following terms and acronyms are defined here:

CAA—Clean Air Act
CBI—confidential business information
CDD/CDF—chlorinated dibenzo-dioxins and furans
CDX—Central Data Exchange
CEMS—continuous emission monitoring system
CPMS—continuous parameter monitoring system
ERT—Emissions Reporting Tool

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[1] Throughout this preamble, "we" refers to EPA.

Fe—fraction emitted
GACT—generally available control technologies or management practices
HAP—hazardous air pollutants
HCl—hydrogen chloride
HON—Hazardous Organic NESHAP
ICR—information collection request
K—kurtosis
lbs/yr—pounds per year
l/min—liters per minute
MACT—maximum achievable control technology
NESHAP—national emission standards for hazardous air pollutants
ng/dscm—nanograms per dry standard cubic meter
NTTAA—National Technology Transfer and Advancement Act
OP—Office of Policy
ppbv—parts per billion by volume
ppbw—parts per billion by weight
ppmv—parts per million by volume
ppmw—parts per million by weight
PRD—pressure relief device
psia—pounds per square inch absolute
PVC—polyvinyl chloride and copolymers
PVCPU—PVC production process unit
RFA—Regulatory Flexibility Act
RIN—Regulatory Information Number
S—skewness
SEK—standard error of kurtosis
SES—standard error of skewness
TCEQ—Texas Commission on Environmental Quality
TEF—toxic equivalency factor
TEQ—toxic equivalent
THC—total hydrocarbons
TTN—Technology Transfer Network
UMRA—Unfunded Mandates Reform Act
UPL—upper prediction limit
VCM—vinyl chloride monomer
WWW—World Wide Web

Organization of This Document. The following outline is provided to aid in locating information in this preamble.

A redline version of the regulatory language that incorporates the changes in this proposed action to 40 CFR 63, subpart DDDDDD is available in the docket.

I. General Information

A. Do these rules apply to me?

The proposed rules establish national emission standards for hazardous air pollutants (NESHAP) for PVC production.

The regulated categories and entities potentially affected by the proposed PVC production standards include the following:

Category	NAICS[1] Code	Examples of potentially regulated entities
Polyvinyl chloride resins manufacturing	325211	Facilities that polymerize vinyl chloride monomer to produce polyvinyl chloride and/or copolymers products.

[1] North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. To determine whether your facility, company, business, organization, *etc.,* would be affected by this proposed action, you should examine the applicability criteria in the proposed 40 CFR part 63, subpart HHHHHHH (National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production), and in 40 CFR part 63, subpart DDDDDD (National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production Area Sources).

Your PVC production process unit (PVCPU) is not subject to this subpart if it is a research and development facility, as defined in section 112(c)(7) of the Clean Air Act (CAA). If you have any questions regarding the applicability of the proposed action to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What should I consider as I prepare my comments to EPA?

Submitting CBI. Do not submit information that you consider to be CBI electronically through *http://www.regulations.gov* or E-mail. Send or deliver information identified as CBI to only the following address: Ms. Jodi Howard, c/o OAQPS Document Control Officer (Room C404–02), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attn: Docket ID No. EPA–HQ–OAR–2002–0037.

Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD–ROM that you mail to EPA, mark the outside of the disk or CD–ROM as CBI and then identify electronically within the disk or CD–ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. If you submit a disk or CD–ROM that does not contain CBI, mark the outside of the disk or CD–ROM clearly that it does not contain CBI. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

If you have any questions about CBI or the procedures for claiming CBI, please consult the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

C. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of this proposed action will also be available on the World Wide Web (WWW) through the Technology Transfer Network (TTN). Following signature, a copy of the proposed action will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at the following address: *http://www.epa.gov/ttn/oarpg/.* The TTN provides information and technology exchange in various areas of air pollution control.

II. Background Information for These Proposed Rules

A. What is the statutory authority for the proposed PVC rule?

Section 112(d) of the CAA requires us to establish NESHAP for source categories and subcategories of both major and area sources of hazardous air pollutants (HAP) that are listed for regulation under CAA section 112(c). A major source emits or has the potential to emit 10 tons per year (tpy) or more of any single HAP or 25 tpy or more of any combination of HAP. An area source is a HAP-emitting stationary source that is not a major source.

Section 112(d) of the CAA requires EPA to set emissions standards for HAP emitted by major stationary sources based on performance of the maximum achievable control technology (MACT). The MACT standards for existing sources must be at least as stringent as the average emissions limitation achieved by the best performing 12 percent of existing sources (for which the Administrator has emissions information) or the best performing five sources for source categories or subcategories with fewer than 30 sources (CAA section 112(d)(3)(A) and (B)). This minimum level of stringency is called the MACT floor. For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best controlled similar source (CAA section 112(d)(3)). EPA also must consider more stringent "beyond-the-floor" control options. When considering beyond-the-floor options, EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account costs, energy, and non-air quality health and environmental impacts when doing so.

Section 112(k)(3)(B) of the CAA requires EPA to identify at least 30 HAP which, as a result of emissions from area sources, pose the greatest threat to public health in the largest number of urban areas. EPA implemented this provision in 1999 in the Integrated Urban Air Toxics Strategy (Strategy), (64 FR 38715, July 19, 1999). Specifically, in the Strategy, EPA identified 30 HAP that pose the greatest potential health threat in urban areas, and these HAP are referred to as the "30 urban HAP." CAA section 112(c)(3) requires EPA to list sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the emissions of the 30 urban HAP are subject to regulation. A primary goal of the Strategy is to achieve a 75-percent reduction in cancer incidence attributable to HAP emitted from stationary sources.

EPA can set MACT standards for area sources. Section 112(d)(2). Alternatively, under CAA section 112(d)(5), EPA can promulgate standards or requirements for area sources "which provide for the use of generally available control technologies ["GACT"] or management practices by such sources to reduce emissions of hazardous air pollutants." Additional information on GACT is found in the Senate report on the legislation (Senate Report Number 101–228, December 20, 1989), which describes GACT as:

> * * * methods, practices and techniques which are commercially available and appropriate for application by the sources in the category considering economic impacts and the technical capabilities of the firms to operate and maintain the emissions control systems. Consistent with the legislative history, we can consider costs and economic impacts in determining GACT.

Determining what constitutes GACT involves considering the control technologies and management practices that are generally available to the area sources in the source category. We also consider the standards applicable to major sources in the analogous source category to determine if the control technologies and management practices are transferable and generally available to area sources. In appropriate circumstances, we may also consider technologies and practices at area and major sources in similar categories to determine whether such technologies and practices could be considered generally available for the area source categories at issue. Finally, as noted above, in determining GACT for a particular area source category, we consider the costs and economic impacts of available control technologies and management practices on that category.

Under CAA section 112(d)(6), we are required to "review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years."

We are proposing revised standards for vinyl chloride emissions from area sources under the authority of CAA section 112(d)(6). We are also proposing standards for dioxin, hydrogen chloride (HCl), and total HAP under CAA section 112(d)(5).

B. What is the history of the PVC Production source category?

On July 16, 1992, PVC Production was listed as a major source category for regulation pursuant to section 112(c) of the CAA (57 FR 31576). A major source of HAP is a stationary source that has the potential to emit 10 tpy or more of any one HAP or 25 tpy or more of any combination of HAP.

On June 26, 2002, PVC Production was listed as an area source category for regulation pursuant to sections 112(c)(3) and 112(k)(3)(B)(ii) of the CAA (67 FR

43112). An area source is a stationary source of HAP that is not a major source.

On July 10, 2002, EPA promulgated NESHAP for new and existing PVC production facilities that are major sources in 40 CFR part 63, subpart J (67 FR 45886, July 10, 2002) (referred to as the "part 63 NESHAP"). In that rulemaking, EPA determined that compliance with the existing Vinyl Chloride NESHAP (40 CFR part 61, subpart F) (referred to as the "part 61 NESHAP") reflected the application of MACT; thus, satisfying CAA section 112(d), with the exception of adding requirements for equipment leaks at new sources. In the part 61 NESHAP and the associated part 63 NESHAP, EPA regulated vinyl chloride emissions as a surrogate for all HAP emitted from PVC production. For equipment leaks, the part 63 NESHAP required that new sources comply with 40 CFR part 63, subpart UU, National Emission Standards for Equipment Leaks—Control Level 2 Standards.

In *Mossville Environmental Action Now* v. *EPA,* 370 F.3d 1232 (DC Cir. 2004), the petitioners argued that EPA failed to set emission standards for all HAP emitted by PVC plants. EPA had set emission standards for vinyl chloride as a surrogate for the remaining HAP, because it was the predominant HAP used and emitted at PVC plants. The Court ruled that EPA did not adequately explain the basis for its decision to use vinyl chloride as a surrogate for other HAP. The Court "vacated and remanded [the rule in its entirety] to the Agency for it to reconsider or properly explain its methodology for regulating [HAP] emitted in PVC production other than vinyl chloride by use of a surrogate." 370 F.3d at 1243. This rule proposes NESHAP for PVC production major sources in response to the remand, and in accordance with section 112 of the CAA.

On January 23, 2007 (72 FR 2930), EPA promulgated NESHAP for new and existing PVC production area sources in 40 CFR part 63, subpart DDDDDD. Subpart DDDDDD is based on GACT, and requires area sources to meet the requirements in the existing Vinyl Chloride NESHAP (part 61 NESHAP). The part 61 NESHAP requirements address only vinyl chloride emissions. In this rulemaking, we are fulfilling our obligation under section 112(d)(6) of the CAA to review, and revise, as necessary, the PVC production area source standards. We are coordinating our review of the area source standards with the development of major source MACT standards in response to the Court remand.

C. Summary of Related Court Decisions

In addition to *Mossville Environmental Action Now* v. *EPA,* summarized above, two other court decisions are relevant to this proposal. In March 2007, the District of Columbia Circuit Court issued an opinion (*Sierra Club* v. *EPA,* 479 F.3d 875 (DC Cir. 2007) (Brick MACT)) vacating and remanding CAA section 112(d) MACT standards for the Brick and Structural Clay Ceramics source categories. Some key holdings in that case were:

- MACT floors for existing sources must reflect the average emission limitation achieved by the best performing 12 percent of existing sources, not levels EPA considers to be achievable by all sources (479 F.3d at 880–81);
- EPA cannot set floors of "no control." The Court reiterated its prior holdings, including *National Lime Association* v. *EPA,* 233 F.3d 625 (DC Cir. 2000), confirming that EPA must set floor standards for all HAP emitted by the major source, including those HAP that are not controlled by at-the-stack control devices (479 F.3d at 883); and
- EPA cannot ignore non-technology factors that reduce HAP emissions, including when determining which sources are best performers for purposes of ascertaining the MACT floor. Specifically, the Court held that "EPA's decision to base floors exclusively on technology even though non-technology factors affect emissions violates the Act." (479 F.3d at 883).

In addition, the fact that a specific level of performance is not being intentionally achieved by the source is not a legal basis for excluding the source's performance from consideration. *Sierra Club* v. *EPA,* 479 F.3d at 631–34; *National Lime Association* v. *EPA,* 233 F.3d at 640.

The Brick MACT decision also stated that EPA may account for variability in setting floors. However, the Court found that EPA erred in assessing variability, because it relied on data from the worst performers to estimate best performers' variability, and held that "EPA may not use emission levels of the worst performers to estimate variability of the best performers without a demonstrated relationship between the two" (479 F.3d at 882).

A second Court opinion of relevance to this proposal is Sierra Club v. EPA, 551 F.3d 1019 (DC Cir. 2008). In that case, the Court vacated portions of two provisions contained in the General Provisions (40 CFR part 63, subpart A). The regulations at issue were 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), which, when incorporated into CAA section 112(d) regulations for specific source categories, exempt sources from the requirement to comply with the otherwise applicable CAA section 112(d) emission standard during periods of startup, shutdown, and malfunction.

D. What are the emission sources at PVC production facilities?

PVC production includes the manufacture of PVC resins. The resins are then used to make a large number of commercial and industrial products. Producing these resins involves batch reactors where vinyl chloride monomer (VCM), along with initiators and inhibitors, is polymerized as a homopolymer, or copolymerized with varying amounts of a co-monomer, such as vinyl acetate. At most facilities, the resulting resins are in a slurry form and are then stripped to recover the unreacted VCM. The stripped resin is then dried into powders or granules. PVC resins are then either shipped offsite, or used to make final products in equipment and unit operations that are not covered under this source category.

PVC is not a HAP, but the manufacture of PVC resin requires VCM, which is a HAP, as a primary feedstock. Unreacted VCM and other organic HAP present in feedstocks or formed during the polymerization process may be present in process components. HAP may be released from an opening or leak in a process component; or the residual HAP (*i.e.,* unreacted VCM, and other organic compounds) in the resin may be released to the atmosphere as a result of drying or handling dry resin. Stripping the polymerized resin to recover unreacted VCM reduces the air emissions of vinyl chloride and other HAP from the resin slurry by reducing the amount of HAP present. Gaseous vent streams containing vinyl chloride and other HAP that originates from process equipment prior to, and including the resin stripper, are sent to a VCM recovery process before being routed to one or more control devices, such as an absorber, or thermal oxidizer, followed by a halogenated compound scrubber. Combustion controls greatly reduce vinyl chloride and other HAP emissions, but may create other HAP, in particular, chlorinated dibenzo-dioxins and furans (CDD/CDF), and HCl.

Emission sources in the PVC production process include process components prior to, and including, the resin stripper(s) (*e.g.,* the reactor, resin stripper, reactor used as a stripper, storage and feed vessels for raw materials, additives, initiators, and inhibitors); VCM recovery systems (*e.g.,* condenser or other vapor separation devices, holding tanks, gas holders); and process components downstream of the resin stripper(s) (*e.g.,* centrifuges, concentrators, blend tanks, filters, dryers, conveyor air discharges, bagging operations, resin handling and conveyance equipment), and final resin storage tanks or storage silos. Additional emission sources at PVC production facilities include leaking equipment (*e.g.,* pumps, valves, compressors); wastewater collection and treatment systems; heat exchange system components (*e.g.,* cooling towers, heat exchangers, pumps, and other equipment associated with the heat exchange system); and other emission sources, such as opening a reactor and other components for maintenance and cleaning.

E. What HAP are emitted from PVC production facilities?

The HAP emitted from PVC production processes includes a wide variety of HAP. There are no metal HAP emitted from PVC production. In addition, combustion control devices emit HCl and CDD/CDF. Of the HAP emitted from PVC production processes, 1,3-butadiene, benzene, CDD/CDF, and vinyl chloride have been classified as known human carcinogens.[2] Several other compounds that may be emitted from PVC production processes have been classified as probable carcinogens, such as acetaldehyde, bis (2-ethylhexyl) phthalate, chloroform, chloroprene, ethylene dichloride, ethylidene dichloride, formaldehyde, iso-octane, methylene chloride, vinyl bromide, and vinylidene chloride.[3]Hydrogen chloride, along with other non-carcinogenic HAP (*e.g.,* methanol), are also emitted from PVC production processes.

F. How did we gather information for the proposed PVC rule?

We gathered information on PVC production through review of previously collected information, current literature, data from the *National Emissions Inventory,* meetings and voluntary information submissions by industry and the industry trade association, and formal information collection pursuant to CAA section 114.

There were two components to the information collection. First, we solicited information from eight PVC companies in the United States that manufacture PVC resin. The collection obtained available information on PVC production units at major and area sources (*e.g.,* information on production processes, equipment, emission points, control techniques, operating practices, and emissions based on previous tests or calculations). Companies were also asked to provide data for other emission sources, including process component openings and cleanouts, handling of unstripped resin, filters, and gas holders. Second, we required the same companies to measure the HAP content in their PVC resins (both following stripping, but before drying, and after drying) and measure the HAP emissions at the inlet and outlet to their process vent control devices. The information collection is documented in the memorandum, *Information Collection for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category,* and results of this information collection are available in the docket.

III. Summary of the Proposed Rule

This section summarizes and provides our rationale for the requirements proposed in this action. In section III of this preamble, the term “you” refers to owners and operators of sources affected by the proposed rule.

A. What is the affected source for the proposed rule?

The proposed rule applies to owners or operators of PVC PU located at, or that are part of, a major source or an area source as defined in 40 CFR 63.2. The affected source for this subpart is each individual PVCPU. An existing affected source is a PVCPU that is not a new affected source, as defined in 40 CFR 63.11870 of the proposed rule. A new affected source is a PVCPU for which construction is commenced on or after May 20, 2011 at a major or area source. If components of an existing affected source are replaced such that the replacement meets the definition of reconstruction in 40 CFR 63.2 and the reconstruction commenced on or after May 20, 2011, then the existing source becomes a reconstructed source and is subject to the relevant standards for a new affected source. The reconstructed source must comply with the requirements for a new affected source upon initial startup of the reconstructed source, or by the effective date of publication of the final rule in the **Federal Register**, whichever is later.

A PVCPU is defined as a collection of process components that is assembled and connected by hard-piping or duct work that processes raw materials to manufacture PVC resin. A PVCPU includes, but is not limited to, polymerization reactors; resin strippers; blend tanks; centrifuges; dryers; product separators; recovery devices; feed, intermediate, and product storage vessels; finished product loading operations; heat exchange systems; wastewater strippers; wastewater treatment systems; connected ducts and piping; and equipment in HAP service, including pumps, compressors, agitators, pressure relief devices (PRD), sampling connection systems, open-ended valves or lines, valves, and connectors.

B. What is the relationship between this proposed rule and the existing 40 CFR part 61 standards for PVCPU?

PVCPU are currently subject to requirements in the part 61 NESHAP. This proposed rule includes requirements that are at least as stringent as the requirements in this existing rule. We, therefore, propose that once facilities are in compliance with the final PVCPU MACT, the requirements of the part 61 NESHAP would no longer apply.

C. How have we used subcategories in the proposed rule?

Most of the emissions sources subject to the proposed regulation have the same characteristics, and are addressed consistently, independent of process operations or products produced. We are proposing, however, three subcategories for our limits on the amount of HAP remaining in resins following polymerization and stripping (*i.e.,* the stripped resin). These subcategories are based on the type of resin produced, and include: (1) Bulk resin, (2) dispersion resin, and (3) all other resin (*e.g.,* suspension and solution resin).

D. What proposed emission limitations and work practice standards must I meet?

The proposed rule would establish the same requirements for affected sources located at major and area sources. We explain in section IV.C below our rationale for the standards proposed for area sources.

1. Storage Vessels and Handling Operations

Under 40 CFR 63.11910 and Table 4 of the proposed rule, if you own or operate a storage vessel at a new or existing affected source, we are proposing that material with a maximum true vapor pressure of the stored liquid greater than 11.1 pounds per square inch absolute (psia) be stored in pressure vessels with no emissions to the atmosphere. During those times when purging is required, or when the pressure vessel is being loaded, the

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[2] U.S. EPA, *Integrated Risk Information System* (IRIS). Available at *http://www.epa.gov/IRIS/index.html.*

purged stream or the emission stream during loading would be required to be routed to a closed vent system and control device. The closed vent system and control device must meet the requirements specified in 40 CFR 63.11925 of the proposed rule. You would also be required to equip all openings in the pressure vessel with closure devices that are designed to operate with no detectable emissions, as determined using procedures specified in 40 CFR 63.11910(a)(3) of the proposed rule.

For storage vessels with a capacity greater than or equal to 40,000 gallons, storing material with a maximum true vapor pressure greater than or equal to 0.75 psia, or storage vessels with a capacity greater than or equal to 20,000 gallons (but less than 40,000 gallons), storing materials with a maximum true vapor pressure greater than or equal to 4 psia, we are proposing two equivalent compliance options. We are proposing that material be stored in either: (1) A floating roof tank meeting the operating, inspection, and maintenance requirements of 40 CFR part 63, subpart WW, or (2) a fixed roof storage vessel that routes vent streams to a closed vent system and control device (meeting the requirements of 40 CFR 63.11925 of the proposed rule) capable of reducing inlet volatile organic compound (VOC) emissions by 95 or greater.

We are proposing that all other storage vessels meet the operating, inspection, and maintenance requirements for fixed roof vessels of 40 CFR 63.11910(a) of the proposed rule, or comply with either the controlled fixed roof or floating roof requirements discussed previously. 40 CFR 63.11910(a)(1)(ii) and 40 CFR 63.11910(a)(3)(i) of the proposed rule include requirements to equip each opening in the roof with a closure device, and to perform initial and annual inspections, and repair any defects found within the specified time period. Defects include, but are not limited to, visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

We are not proposing requirements for handling operations (unloading and transfer) for reasons explained in section IV.D of this preamble.

2. Equipment Leaks

In 40 CFR 63.11915 of the proposed rule, we are proposing that existing and new affected sources comply with the leak detection and repair (LDAR) program requirements of the National Emission Standards for Equipment Leaks-Control Level 2 Standards, subpart UU of 40 CFR part 63, except for agitators, and rotating or reciprocating pumps and compressors. For gas and light liquid valves, subpart UU specifies a leak definition of 500 parts per million VOC, and a monitoring frequency that is dependent upon the number of leaking valves. Subpart UU also requires equipment specifications that prevent leaks for other pieces of equipment.

We are proposing that rotating pumps be sealless, equipped with double seals, or equivalent. Reciprocating pumps, reciprocating and rotating compressors, and agitator must be equipped with double seals, or equivalent, as provided in 40 CFR 63.11915 of the proposed rule. If double mechanical seals or double outboard seals are used, HAP emissions must be minimized by maintaining the pressure between the two seals so that the leak occurs into the pump, compressor, or agitator; by ducting any HAP between the two seals through a closed vent system to a control device meeting the process vent emission limits specified in 40 CFR 63.11925 of the proposed rule; or by an equivalent method, as provided in 40 CFR 63.11915 of the proposed rule.

We are proposing that a vinyl chloride monitoring system be operated for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system is a device that obtains air samples from one or more points continuously, and analyzes the samples with gas chromatography, infrared spectrophotometry, flame ion detection, or an equivalent or alternate method.

In 40 CFR 63.11915 of the proposed rule, we are also proposing that, in addition to operating with no detectable emissions, there be no discharge to the atmosphere from any PRD on any equipment in HAP service within the PVCPU. We are proposing that upon a discharge to the atmosphere from the PRD that the monitoring requirements specified in 40 CFR part 63, subpart UU for pressure releases from PRD be followed.

3. Heat Exchange Systems

In 40 CFR 63.11920 of the proposed rule, we are proposing that you implement a LDAR program to detect leaks of VOC into cooling water. For existing sources, we are proposing monthly monitoring for both closed loop and once-through heat exchange systems using either the Texas Commission on Environmental Quality (TCEQ) Modified El Paso Method[3] or EPA Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, with a leak action level of 38 parts per billion by weight (ppbw) of total strippable VOC in the cooling water or 2.9 parts per million by volume (ppmv) of total strippable VOC in the stripping gas. For new sources, we are proposing twice-daily (12 hour intervals) monitoring for both closed loop and once-through heat exchange systems using either the TCEQ's Modified El Paso Method[4] or EPA Method 8021B with a leak action level of 30 ppbw of total strippable VOC in the cooling water or 2.3 ppmv of total strippable VOC in the stripping gas. The delay of repair action level for both new and existing sources is 380 ppbw of total strippable VOC in the cooling water or 29 ppmv of total strippable VOC in the stripping gas. When a leak is identified, additional monitoring must be performed to isolate the source of the leak. If the total strippable VOC concentration remains below the leak action level throughout the period of additional monitoring, then repairs are not required; otherwise, repairs must be completed within 45 days of identifying the leak. Repairs may be delayed if the concentration of total strippable VOC in the cooling water or stripping gas remains below the delay of repair action level and either: (1) It is technically infeasible to repair the leak without a shutdown, or (2) the necessary equipment, parts, or personnel are not available.

4. Process Vents

In 40 CFR 63.11925 of the proposed rule, we are proposing all the vent streams from: polymerization reactors, resin strippers, other process components prior to the resin stripper, VCM recovery systems, wastewater collection and treatment system, slip gauges, unloading and loading lines, and samples be routed through a closed vent system to a control device. We are proposing the emission limitations presented in Table 1 of this preamble for

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[3] *Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources,* Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by TCEQ, January 31, 2003 (incorporated by reference—see 40 CFR 65.645).

[4] *Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources,* Revision Number One, dated January 2003, *Sampling Procedures Manual*, Appendix P: Cooling Tower Monitoring, prepared by TCEQ, January 31, 2003 (incorporated by reference—see 40 CFR 65.645).

the outlet of the control device. These emission limitations apply at all times.

Table 1—Emission Limitations for Process Vents [a]

Pollutant	Emission Limitations [b]	
	Existing sources	New sources
Vinyl chloride	0.32 ppmv	3.2 ppbv
Hydrogen chloride	150 ppmv	0.17 ppmv
Total organic HAP	12 ppmv	0.22 ppmv
Dioxin/Furans (TEQ)	0.023 ng/dscm	0.0087 ng/dscm

[a] Process vents limits apply at the outlet of the control device which controls closed vent streams from polymerization reactors, resin strippers, other process components prior to the resin stripper(s), VCM recovery systems, certain storage vessels, the wastewater collection and treatment system, slip gauges, unloading and loading lines, and samples.

[b] ppbv = parts per billion by volume dry at 3-percent O^2. ppmv = parts per million by volume dry at 3-percent O^2. ng/dscm = nanograms per dry standard cubic meter at 3-percent O^2.

5. Other Emission Sources

Other emission sources include reactor and other component opening losses. When reactors or other components (including pre-polymerization reactors used in the manufacture of bulk resins) are opened for cleaning, we are proposing in 40 CFR 63.11955 of the proposed rule that emissions be minimized prior to opening. We are proposing that emissions from opening a polymerization reactor must not exceed 0.04 pound vinyl chloride/ton of polyvinyl chloride product where the product means the gross product of pre-polymerization and post-polymerization. We are proposing emissions from opening of process components for any reason be minimized by reducing the volume of vinyl chloride to an amount that occupies a volume of no more than 2.0 percent of the component's containment volume or 25 gallons, whichever is larger, at standard temperature and pressure. Any vinyl chloride removed from opening equipment must be ducted through a closed vent system to a control device meeting the requirements in 40 CFR 63.11925 through 40 CFR 63.11950 of the proposed rule. The outlet of the control device must meet the emission limitations for process vents discussed in section III.D.4.

6. Stripped Resin

In 40 CFR 63.11960 of the proposed rule, we are proposing emission limitations for residual vinyl chloride and total HAP in the stripped resin presented in Tables 2 and 3 of this preamble. The limits were developed for new and existing sources for three subcategories of PVC resins: (1) Bulk resins, (2) dispersion resins, and (3) all other resins. These emission limits would apply at all times.

Table 2—Limits for Stripped Resin at Existing Sources

Pollutant	Emission limits (ppmw)		
	Bulk resins	Dispersion resins	All other resins
Vinyl chloride	7.1	55	0.48
Total HAP	170	110	76

Table 3—Limits for Stripped Resin at New Sources

Pollutant	Emission limitations (ppmw)		
	Bulk resins	Dispersion resins	All other resins
Vinyl chloride	7.1	41	0.20
Total HAP	170	58	42

7. Wastewater

In 40 CFR 63.11965 of the proposed rule, we are proposing that you must determine the vinyl chloride concentration for each wastewater stream at the point of wastewater generation. Streams with 10 ppmw vinyl chloride, or more, must be treated to reduce the concentration of vinyl chloride to a concentration of 0.11 ppmw for existing sources, and 0.0060 ppmw for new sources. The 10 ppmw determination applies before the wastewater stream is exposed to the atmosphere, stored, mixed with any other wastewater stream, and enters a wastewater treatment process, or is discharged untreated as a wastewater.

We are also proposing that wastewater streams with flow rates greater than or equal to 10 liters per minute (l/min), and the concentrations of HAP, as determined by Method 305 (as specified in 40 CFR part 63, subpart G, Table 9) greater than or equal to 1,000 ppmw, meet the Hazardous Organic NESHAP (HON) wastewater requirements, as described in the sections of 40 CFR part 63, subpart G, and specified in the proposed rule.

Streams that contain less than 10 ppmw vinyl chloride (at the point of generation), and streams that either contain less than 1,000 ppmw total HAP, or have a flow rate less than the 10 l/min criteria (at the point of determination, as defined by 40 CFR part 63, subpart G), are not required to further reduce emissions, but must remain below these levels.

E. When must I comply with the proposed standards?

Existing affected sources would be required to comply with the proposed 40 CFR part 63, subpart HHHHHHH no later than 3 years after publication of the final rule in the **Federal Register**. New affected sources would be required to comply on the effective date of the final rule, or upon startup, whichever is later.

F. What are the initial and continuous compliance requirements?

In 40 CFR 63.11896 of the proposed rule, we are proposing that, if you make a process change to an existing affected source that does not meet the criteria to become a new affected source in 40 CFR 63.11870(c) of the proposed rule, you must demonstrate that any added emission points are in compliance with the applicable requirements for an existing affected source. If the process change results in a change in the characteristics of any emission point such that a different emission limit, operating parameter limit, or work practice standard applies, we are proposing that you demonstrate that the changed emission point complies with the applicable requirements for an existing affected source. You must demonstrate compliance with any applicable work practice standards upon startup of the changed emission point, and must demonstrate compliance with any emission limits and establish applicable operating limits by 180 days after the date of initial startup of the changed process unit.

We are also proposing that, if you make a process change to a new affected source, you would demonstrate that any added emission point(s) is/are in compliance with the applicable work practice standards for a new affected source by start-up of the changed emission point. You must also demonstrate initial compliance with any emission limits and establish applicable operating limits by 180 days after the date of initial startup of the changed process unit.

If you make a process change that adds or changes emission points, we are proposing that you demonstrate continuous compliance with your emission limits and standards, operating limits, and work practice standards according to the procedures and frequency in 40 CFR 63.11910 through 40 CFR 63.11980 of this proposed rule, and submit a notification report specified in 40 CFR 63.11985 of the proposed rule.

1. What are the initial and continuous compliance requirements for storage vessels?

For each floating roof storage vessel, we are proposing that you meet the operating, inspection, repair, and maintenance requirements of 40 CFR part 63, subpart WW. For each fixed roof storage tank venting through a closed vent system to a control device achieving 95-percent reduction in total HAP emissions, we are proposing that you meet the requirements for closed vent systems and control devices in 40 CFR 63.11925 of the proposed rule, and summarized in section III.D.3 of this preamble.

In 40 CFR 63.11910 of the proposed rule, we are also proposing that, for each fixed roof tank, you install and maintain the tank with no visible cracks, holes, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall. We are also proposing that you must install closure devices that you secure in the closed position except during periods when you need to have access to the interior of the fixed roof tank. The closure device may be opened when needed to provide access. The fixed roof tank and its closure device would be required to be inspected initially, and at least once per year. The inspection requirements would not be applicable to parts of the fixed roof that are determined to be unsafe to inspect if you document and explain why it is unsafe to inspect and develop a plan to conduct inspections when the tank is not in service. A first attempt to repair defects must be made no later than 5 calendar days after detection, and repairs would be required to be completed no later than 45 days after detection, except as specified in 40 CFR 63.11910(a)(4)(ii) of the proposed rule.

In 40 CFR 63.11910 of the proposed rule, for pressure vessels, we are proposing that all potential leak interfaces in the pressure vessel be monitored for leaks annually and repaired following the procedures of 40 CFR 63.11915 of the proposed rule.

2. What are the initial and continuous compliance requirements for equipment leaks?

For each applicable piece of equipment (e.g., valves, connectors) associated with your affected source, we are proposing that you meet the LDAR requirements of 40 CFR part 63, subpart UU. In 40 CFR 63.11915 of the proposed rule, you would also be required to install electronic indicators on each PRD that would be able to identify and record the time and duration of each pressure release and notify operators that a pressure release has occurred.

3. What are the initial and continuous compliance requirements for heat exchange systems?

We are proposing that for each affected source, you must operate an equipment leak program, as specified in the proposed rule. Under the compliance requirements for heat exchange systems in 40 CFR 63.11920 of the proposed rule, an affected source would be required to conduct sampling and analyses using either the TCEQ Modified El Paso Method, Revision Number One, dated January 2003,[5] or EPA Method 8021B, no less frequently than monthly for existing sources and twice-daily (12-hour intervals) for new sources, and fix any leaks detected. We are proposing different sampling locations for once-through and closed loop heat exchange systems as specified in 40 CFR 63.11920 of the proposed rule. For once-through systems only, you may monitor at the cooling tower return line prior to exposure to the air. For once-through systems, you must monitor selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers within a system is covered by the selected monitoring location. Monitoring of selected heat exchanger exit lines is also a monitoring option for closed loop systems. Additionally, for once-through systems, you may also monitor the inlet water feed line prior to any heat exchanger. If multiple heat exchange systems use the same water feed (*i.e.*, inlet water from the same primary water source), you may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems

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[5] *Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources*, Revision Number One, dated January 2003, *Sampling Procedures Manual*, Appendix P: Cooling Tower Monitoring, prepared by TCEQ, January 31, 2003 (incorporated by reference—see 40 CFR 65.645).

that use that same water feed. We are proposing to exempt a heat exchange system from the monitoring requirements in 40 CFR 63.11920 if all heat exchangers within the heat exchange system operate with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side, or the heat exchange system does not contain any heat exchangers.

Identified leaks must be repaired as soon as practicable, but within 45 days after identifying the leak. We are proposing delay of repair action levels as either a total strippable VOC concentration (as methane) in the stripping gas of 29 ppmv or a total strippable VOC concentration in the cooling water of 380 ppbw. Leaking heat exchanger repairs may be delayed if the repair is technically infeasible without a shutdown, or the necessary equipment, parts, or personnel are not available. To delay repairs in either case, the total strippable VOC must initially be, and remain less than, the delay of repair action level for all monitoring periods during the delay of repair.

4. What are the initial and continuous compliance requirements for process vents?

To demonstrate compliance for process vents, you would be required to meet the requirements of proposed 40 CFR 63.11930 for each closed vent system that routes emissions from process vents subject to the HAP emission limits to a control device. You would be required to meet the initial and continuous compliance requirements for process vents specified in 40 CFR 63.11925 and 40 CFR 63.11935, the monitoring requirements for your process vent control device, as specified in proposed 40 CFR 63.11940, and the performance testing requirements for process vents in 40 CFR 60.11945. You may not use a flare to comply with the emission limits of the proposed rule, as specified in 40 CFR 63.11925(b).

Closed vent systems. In 40 CFR 63.11930 of the proposed rule, for closed vent systems, you would be required to meet specified design requirements and install flow indicators in the bypass lines, or meet other requirements to prevent and detect bypass of the control device. You must also follow the inspection, leak monitoring, and repair requirements in 40 CFR 63.11930 of the proposed rule for closed vent systems. Closed vent systems in vacuum service would be required to install alarms rather than performing leak inspection and monitoring. If you operate a closed vent system in vacuum service, you are not required to comply with the other closed vent system requirements in the proposed rule.

Performance testing, continuous parameter monitoring system (CPMS), and continuous emission monitoring system (CEMS) requirements for process vents and associated control devices. Compliance would be demonstrated through a combination of performance testing (as specified in 40 CFR 63.11925 and 40 CFR 63.11945) and/or monitoring using CEMS or CPMS that measure process vent control device operating parameters (as specified in 40 CFR 63.11925, 40 CFR 63.11935, and 40 CFR 63.11940). These sections also refer to Tables 1, 2, 6, and 7 of the proposed rule for emission limits, testing methods, and requirements. Below, we summarize the process vent testing and compliance requirements by pollutant. Each test would consist of three test runs.

We are proposing that existing and new sources would be required to demonstrate initial and annual compliance with the total organic HAP emission limits in Table 1 or 2 of the proposed rule by measuring total hydrocarbon (THC) at the outlet of the control device using EPA Method 25A, as specified in Table 9 of the proposed rule. The minimum test run duration would be 1 hour.

During the initial compliance test, you would be required to establish values for the control device operating parameters specified in 40 CFR 63.11935 and 40 CFR 63.11940 (*e.g.*, incinerator temperature). You would then use a CPMS to continuously monitor that parameter to demonstrate continuous compliance with the total organic HAP limit. New and existing sources could elect to use THC CEMS instead of annual testing and CPMS for total organic HAP. All CEMS must meet the applicable performance specifications, procedures, and other calibration, accuracy, and operating and maintenance requirements, as specified in 40 CFR 63.11935 of the proposed rule. For vinyl chloride, you would demonstrate compliance by conducting initial and annual performance tests using EPA Method 18. You would be required to establish monitoring parameters during the initial performance test, and continuously monitor control device operating parameters.

For CDD/CDF, you would demonstrate compliance by conducting initial and annual performance tests using EPA Method 23. The minimum sampling volume collected would be 5 cubic meters for Method 23. For HCl, you would demonstrate compliance by conducting an initial performance test using EPA Method 26 or 26A. The minimum sampling volumes collected would be 60 liters for EPA Method 26, or 1 cubic meter for EPA Method 26A. You would be required to establish monitoring parameters during the initial performance test, and continuously monitor control device operating parameters (e.g., liquid flow rate and pH for scrubbers, and temperature and carbon injection rate for activated carbon injection). After EPA publishes final performance specifications for CEMS for HCl and CDD/CDF, new sources would be required to use CEMS instead of annual testing for these pollutants, as required in 40 CFR 63.11925 of the proposed rule. Existing sources could elect to use CEMS instead of annual testing and CPMS for these pollutants. All CEMS must meet the applicable performance specifications, procedures, and other calibration, accuracy, and operating and maintenance requirements, as specified in 40 CFR 63.11935 of the proposed rule.

We have included specific performance testing requirements, including the process operating conditions under which performance tests should be conducted, for continuous process vents and batch operations, as provided in 40 CFR 63.11945 of the proposed rule, and discussed in section III.F and III.G of this preamble.

All CPMS would be required to have data averaging periods of 3-hour block averages. All CPMS would be required to meet minimum accuracy and calibration frequency requirements, as specified in 40 CFR 63.11935 and Table 8 of the proposed rule. For each monitored parameter, you would establish a minimum, maximum, or a range that indicates proper operation of the control device, as specified in 40 CFR 63.11935(d). The proposed rule specifies the parameters that would be monitored for each type of control device, including each incinerator, absorber, adsorber, condenser, sorbent injection system, fabric filter, or other control device. You must also install a flow indicator at the inlet of the control device to indicate periods of no flow to the control device.

Some control devices would be subject to additional emission point-specific performance testing requirements, as described in 40 CFR 63.11945 of the proposed rule. We have included specific performance testing requirements for continuous process vents and batch operations, as provided in 40 CFR 63.11945 of the proposed rule, and discussed in section III.F of this preamble.

5. What are the initial and continuous compliance requirements for wastewater?

As specified in 40 CFR 63.11965(a) of the proposed rule, we are proposing that you must conduct an initial test for wastewater streams from the affected source to determine the vinyl chloride concentration, the total HAP concentration (including all HAP listed in Table 9 of 40 CFR part 63, subpart G), and the flow rate. The concentration tests would be conducted using EPA Method 107 in combination with Resource Conservation and Recovery Act (RCRA) Method SW–8260B and EPA Method 305. Prior to testing, you would be required to submit a test plan for EPA approval that includes your proposed method for analysis using these methods. We are proposing that you sample for vinyl chloride by collecting one grab sample at the point of generation. We are also proposing that you sample for total HAP by collecting one grab sample at the point of determination, as specified in 40 CFR part 63, subpart G.

Wastewater streams that contain less than 10 ppmw vinyl chloride (at the point of generation), and wastewater streams that either contain less than 1,000 ppmw total HAP, or have a flow rate less than the 10 l/min criteria (at the point of determination, as defined by 40 CFR part 63, subpart G), must remain below these levels. You would conduct periodic tests at the same locations, and using the same test methods described above to verify that the stream concentration stays below the vinyl chloride and total HAP concentration levels. Wastewater streams would be tested monthly. There are also proposed requirements in 40 CFR 63.11975(e)(2) of the proposed rule, for demonstrating that you remain below the 10 l/min flow rate criterion, based on flow rate measurements.

If your wastewater stream contains vinyl chloride concentrations greater than or equal to 10 ppmw, you would be required to treat the wastewater stream to achieve a concentration of 0.11 ppmw vinyl chloride at the wastewater stripper outlet for existing sources, and 0.0060 ppmw at new sources. You must conduct an initial compliance test and monthly testing to demonstrate compliance with these limits. We are proposing that you measure at the outlet of the wastewater stripper by collecting one grab sample. In addition, during your performance test, you would be required to establish operating ranges for your wastewater steam or vacuum stripper, including steam-to-feed ratios and stripper bottoms temperature, and also the vacuum level measured in the column for vacuum strippers. You would use a CPMS to continuously monitor control device operating parameters to demonstrate that you continuously meet these limits.

If the wastewater stream exceeds the 1,000 ppmw HAP concentration (based on the list of HAP in Table 9 of 40 CFR part 63, subpart G), and the 10-l/min flow rate, then you must comply with the 40 CFR part 63, subpart G, Group 1, wastewater suppression and treatment requirements, and conduct the compliance testing and monitoring required in subpart G.

For more information on the wastewater compliance requirements, see 40 CFR 63.11965, 40 CFR 63.11970, and 40 CFR 63.11975 of the proposed rule.

6. What are the initial and continuous compliance requirements for stripped resins?

In 40 CFR 63.11960 of the proposed rule, we are proposing that you conduct initial performance tests to demonstrate compliance with the proposed vinyl chloride and total HAP limits for stripped resin. We are also proposing that you conduct daily performance testing to demonstrate continuous compliance with the proposed vinyl chloride limit, and monthly performance testing to demonstrate continuous compliance with the proposed total HAP limit. The tests would be conducted at the outlet of the resin stripper for continuous processes and immediately after stripping for batch processes. You would be required to use EPA Method 107 in combination with RCRA Method SW–8260B, and to include in your test plan a proposed method for analysis using these methods. You would be required to submit the test plan for EPA approval. In addition, during your initial performance test, you would be required to establish operating ranges for your resin steam or vacuum stripper, including steam-to-feed ratios, stripping temperature, and the vacuum level measured in the column for vacuum strippers. You would use a CPMS to continuously monitor resin stripper operating parameters. All CPMS would be required to calculate 3-hour block averages for the parameters measured.

To demonstrate initial compliance with the total HAP limits, you would be required to collect one grab sample every 8 hours for a single grade, or one grab sample per grade of PVC resin produced, whichever is more frequent for each resin stripper over a 24-hour period. To determine initial compliance with the vinyl chloride limit, you would be required to collect one grab sample every 8 hours for a single grade, or one grab sample per grade of PVC resin produced, whichever is more frequent, for each resin stripper over a 24-hour period. You would be required to collect samples over a 24-hour period during which you are manufacturing the grade of resin, which you produce the most of, based on total mass of resin produced in the preceding month.

To demonstrate continuous compliance with the vinyl chloride limit for a continuous process, you would be required to collect one grab sample from each resin stripper every 8 hours for a single grade, or one grab sample per grade of PVC resin produced, whichever is more frequent. Grade is defined in 40 CFR 63.12010 of the proposed rule and is unchanged from the definition in the Part 61 NESHAP other than the insertion of the term “PVC.” To demonstrate compliance with the vinyl chloride limit for a batch process, you would be required to collect one grab sample from each batch of resin produced. You must demonstrate compliance on a daily basis using a 24-hour average concentration weighted on production.

To demonstrate continuous compliance with the total HAP limits for a continuous process, on a monthly basis you would be required to collect one grab sample every 8 hours for a single grade, or per grade of PVC resin produced, whichever is more frequent from each resin stripper over a 24-hour period. Individual sampling events may be 3 to 5 weeks apart, but you must conduct a minimum of 12 sampling events per calendar year. The 24-hour arithmetic average total HAP concentration for each stripper for each resin grade produced during the 24-hour sampling period must be calculated using the individual HAP concentrations measured for the grab. Beginning 13 months following your initial demonstration of compliance, you must demonstrate continuous compliance with the total HAP emission limit in Table 1 or 2 to this subpart, based on a 12-month rolling average concentration, calculated as the average of the 12 most recent 24-hour arithmetic average concentrations.

To demonstrate continuous compliance with the total HAP limits for a batch process, on a monthly basis, you would be required to collect one grab sample for each batch of resin produced over a 24-hour period. You would be required to collect samples over a 24-hour period during which you are producing the grade of resin, which you manufacture for a majority of the time during that month. You must demonstrate compliance on a monthly basis with the average concentration of the most recent 12 months of data.

7. What are the initial and continuous compliance requirements for other emission sources?

To demonstrate compliance with the requirements for other emission sources, we are proposing that for reactors and other components prior to opening, you must follow the initial and continuous compliance requirements in 40 CFR 63.11925. We are requesting comments on this compliance approach.

G. What are the performance testing requirements for batch process operations?

For batch process operations, performance tests would be conducted under the most challenging conditions that you would run your batch process operations to make sure that the control devices are operating at the level needed to demonstrate compliance with the appropriate emission limits. The Agency's intent is to require testing of the performance of the control device under its most challenging conditions. Subsequent to the initial compliance test, continuous monitoring of operating parameters established during the initial test is a reasonable measure of continuous compliance with the efficiency requirement under all conditions. Presumably, the control device should function as well or better under conditions that are not as challenging. You would be required to develop an emission profile that describes the characteristics of the vent stream at the inlet to the control device under either absolute or hypothetical worst-case conditions. The emissions profile may be developed by process, by process component, or by capture and control device limitations, as specified in 40 CFR 63.11945(c)(3) of the proposed rule. We have provided methodologies to develop the emissions profile for each batch processing operation in proposed 40 CFR 63.11950, including methodologies for vapor displacement, gas sweep of a partially filled vessel, heating, depressurization, vacuum systems, gas evolution, air drying, and purging. All other HAP emissions for the emissions profile would be determined through an engineering assessment, or through testing approved by the Administrator. See 40 CFR 63.11945 of the proposed rule.

H. What are the notification, recordkeeping, and reporting requirements?

1. Notifications and Reports

All new and existing sources would be required to comply with certain requirements of the General Provisions (40 CFR part 63, subpart A), which are identified in Table 5 of the proposed 40 CFR part 63, subpart HHHHHHH. The General Provisions include specific requirements for notifications, recordkeeping, and reporting. Reports include notifications of initial startup, initial notification, notification of compliance status, compliance reports, notification of performance test, notification of inspection, batch pre-compliance report, and other notifications and reports specified in proposed 40 CFR 63.11985.

The notification of compliance status report required by 40 CFR 63.9(h) must include certifications of compliance with rule requirements.

The excess emissions and continuous system performance report and summary report required by 40 CFR 63.10(e)(3) of the NESHAP General Provisions (referred to in the rule as a compliance report) would be required to be submitted semi-annually for reporting periods during which there was: An exceedance of any emission limit or a monitored parameter; a deviation from any of the requirements in the rule occurred; or if any process changes occurred and compliance certifications were reevaluated. The proposed rule includes additional requirements for what you must include in these reports for each type of emission point. See 40 CFR 63.11985 of the proposed rule.

2. Recordkeeping

The proposed rule would require compiling and retaining records to demonstrate compliance with each emission limit and work practice standard. These recordkeeping requirements are specified either directly in the proposed rule, in the General Provisions to 40 CFR part 63, and in 40 CFR part 63, subparts UU and WW. Records that we are proposing that you keep include performance tests, records of CPMS and CEMS, records of malfunction, records of deviations, records specific to each emission point, and other records specified in proposed 40 CFR 63.11990. The 40 CFR part 63 General Provisions requirements that apply are listed in Table 5 of the proposed rule. We are proposing that records be kept for 5 years in a form suitable and readily available for EPA review. We are proposing that records be kept on-site for 2 years; you may keep the records off-site for the remaining 3 years. See 40 CFR 63.11990 of the proposed rule.

I. What are the electronic data submittal requirements?

EPA must have performance test data to conduct effective reviews (*e.g.,* risk assessment) of CAA section 112 standards, as well as for many other purposes, including compliance determinations, emission factor development, and annual emission rate determinations. In conducting these reviews, EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners and operators to locate, collect, and submit emissions test data in paper form because of varied locations for data storage and varied data storage methods. In recent years, though, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

In this action, EPA is proposing a step to increase the ease and efficiency of data submittal and improve data accessibility. Specifically, we are proposing that owners and operators of PVC production facilities would be required to submit electronic copies of reports of certain required performance test reports to EPA's WebFIRE database. The WebFIRE database was constructed to store performance test data for use in developing emission factors. A description of the WebFIRE database is available at *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main.* EPA solicits comment on the proposed electronic data submittal requirements.

Data entry will be through an electronic emissions test report structure called the *Electronic Reporting Tool* (ERT). The ERT would be able to transmit the electronic report through EPA's *Central Data Exchange* (CDX) network for storage in the WebFIRE database making submittal of data very straightforward and easy. A description of the ERT can be found at *http://www.epa.gov/ttn/chief/ert/ert_tool.html.*

The requirement to submit source test data electronically to EPA would only apply to those performance tests conducted using test methods that are supported by the ERT. The ERT contains a specific electronic data entry form for most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at *http://www.epa.gov/ttn/chief/ert/ert_tool.html.*

We believe that industry would benefit from this proposed approach to electronic data submittal. Having these data, EPA would be able to develop improved emission factors, make fewer information requests, and promulgate better regulations.

One major advantage of submitting source test data through the ERT is that it will provide a standardized method to compile and store much of the documentation required to be reported by the proposed rule. Another advantage is that the ERT clearly states what testing information would be required.

Another important benefit of submitting these data to EPA at the time the source test is conducted is that it should substantially reduce the effort involved in data collection activities in the future. When EPA has performance test data in hand, there will likely be fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews. This would result in a reduced burden on both affected facilities (in terms of reduced manpower to respond to data collection requests) and EPA (in terms of preparing and distributing data collection requests and assessing the results).

State, local, and Tribal agencies may also benefit from a more streamlined and accurate review process rather than a manual data assessment, making review and evaluation of the source provided data and calculations easier and more efficient. Finally, another benefit of the proposed data submittal to WebFIRE electronically is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data for establishing emissions factors, and by ensuring that the factors are more representative of current industry operational procedures. A common complaint heard from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, EPA would be able to ensure that emission factors, when updated, represent the most current range of operational practices. In summary, consistent with Executive Order 13563, *Improving Regulation and Regulatory Review,* issued on January 18, 2011, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data would save industry, State, local, Tribal agencies, and EPA significant time, money, and effort while also improving the quality of emission inventories and, as a result, air quality regulations.

J. What revisions are proposed for the area source rule (40 CFR part 63, subpart DDDDDD)?

We are proposing to revise the existing NESHAP for PVC production area sources (40 CFR part 63, subpart DDDDDD) to require that PVC production area sources comply with the proposed rule. Area sources would be required to continue to comply with the current provisions of subpart DDDDDD until they are in compliance with the proposed rule. After that date, existing and new area sources would no longer be subject to the requirements of subpart DDDDDD.

IV. Rationale for the Proposed PVC Rule for Major and Area Sources (40 CFR part 63, subpart HHHHHHH)

A. How did EPA subcategorize PVC production?

The CAA allows EPA to divide source categories into subcategories, based on differences in class, type, or size. For example, differences between given types of units can lead to corresponding differences in the nature of emissions and the technical feasibility of applying emission control techniques. For the stripped resin limits, we are proposing three subcategories.

In the United States, four different types of polymerization processes have been used to manufacture PVC: dispersion, suspension, solution, and bulk. The type of resin production process used is dictated by the end use of the product and the product's required physical and chemical properties and function, such as the need for flexibility, rigidity, or the ability to be molded. For example, to make dispersion resins (as compared to other types of resins), different reactants, initiators, and surfactants are used in the manufacturing process. The differences in chemicals used for manufacturing, and the properties of the final product, result in products with different compositions.

After the polymerization process is complete, the PVC resin is sent to a resin stripper, or the resin can be stripped directly in the reactor to remove residual HAP such as vinyl chloride. The vent streams from the resin stripper, polymerization reactors, other process components upstream of the resin stripper, and vents from the wastewater stripper are sent to recovery processes to recover unreacted VCM. After recovery, the vent stream containing unrecovered VCM is sent to a control device before being emitted to atmosphere.

Dispersion resins have less porosity, mechanical stability, and heat stability than suspension or solution resins, resulting in more difficulty in stripping vinyl chloride. Consequently, the levels of vinyl chloride in the stripped dispersion resin products are not as low as those in the stripped suspension resin products. At bulk resin production, the product of the polymerization process results in a resin that is more of a solid than a slurry, which is unlike solution, dispersion, and suspension resins, and results in a different emissions profile at the resin stripper for organic HAP and vinyl chloride. We are unaware of any resin that is being manufactured using the solution process, and we do not have emissions data on this type of process.

For purposes of the stripped resin limits, which serve to limit emissions from points downstream of the resin stripper, we are proposing to subcategorize PVCPU into three subcategories: bulk resins, dispersion resins, and all other resin types. In the absence of data on solution resin production facilities, we are incorporating them into the "other resins" subcategory, which also includes suspension resin. We are requesting comment on the proposed subcategorization, and the appropriateness of including suspension and solution resins in the same subcategory.

We are not proposing to establish separate subcategories for any of the other emission points regulated by the proposed rule (process vents, equipment leaks, wastewater, storage vessels, other emission sources, and heat exchange systems by resin type). The same air pollution control devices, wastewater treatment processes, and work practices for these kinds of emission points are applicable and effective regardless of any potential differences in physical and chemical properties of the resin being produced. Therefore, EPA chose not to subcategorize in setting emission limitations and work practice standards for these emission points.

B. How did EPA select the emission points, format, and pollutants for the proposed rule?

1. How did EPA select the emission points covered?

The emission points covered by the proposed rule were selected to ensure control of all sources of HAP emissions within the PVC production process. The

HAP emission points within PVCPU are process vents (e.g., process vents from polymerization reactors, resin strippers, other process components prior to the resin stripper, the VCM recovery system, slip gauges, loading and unloading lines, samples, the wastewater collection and treatment system that routes emissions through a closed vent system to a control device, and emission control devices), stripped resin, equipment leaks (*e.g.,* valves, pumps, connectors, and PRD), wastewater collection and treatment systems, storage vessels, reactor and other process component openings, and heat exchange systems.

EPA solicits comment on the emission points proposed for regulation.

2. How did EPA select the format of the proposed rule?

We are proposing to establish numerical emission limits in the form of concentration limits for process vents, stripped resin, and wastewater. We are establishing the process vent emission limits at the outlet of the control device. The process vent emissions are comprised of emissions from polymerization reactors, resin strippers, other process components prior to the resin stripper, the VCM recovery system, certain pressurized and fixed storage vessels, slip gauges, loading and unloading lines, samples, the wastewater collection and treatment system that routes emissions through a closed vent system to the control device, and emission control devices.

The emission limits in the proposed rule provides flexibility for the regulated community by allowing a regulated source to choose any control technology or technique to meet the emission limits, rather than requiring each unit to use a prescribed control method that may not be appropriate in each case. We are proposing numerical emission rate limits as ppmv dry standardized to 3-percent oxygen for process vents. A concentration limit in units of ppmv is consistent with previous EPA and State regulations for PVC production facilities, and other processes controlled by combustion devices.

We are proposing a concentration limit for HAP in the stripped resin in units of ppmw as a means to control HAP emissions from downstream sources (e.g. dryers, centrifuges, filters). We are proposing a concentration based limit because the HAP emissions from vents associated with processes downstream of the resin stripper are dependent on the concentration of HAP in the stripped resin. That is, the greater the HAP concentration in the stripped resin, the greater the HAP emissions from downstream process components. Similarly, the lower the HAP concentration in the stripped resin, the lower the HAP emissions from downstream process components. Consequently, limiting HAP in the stripped resin is the best means to control HAP emissions from downstream processes. This approach is consistent with current Federal and State regulations that are applicable to PVC production facilities.

For wastewater streams that contain greater than or equal to 10 ppmw vinyl chloride, and, accordingly, require treatment to reduce the vinyl chloride concentration, we are proposing a stripper outlet concentration. Wastewater streams with less than 10 ppmw vinyl chloride must stay below that level. To address HAP emissions other than vinyl chloride, the proposed rule would require compliance with the HON requirements in 40 CFR part 63, subpart G.

We are proposing work practice standards to reduce emissions from storage vessels, equipment leaks, and heat exchange systems.

CAA section 112(h)(1) states that the Administrator may prescribe a work practice standard or other requirements, consistent with the provisions of CAA sections 112(d) or (f), in those cases where, in the judgment of the Administrator, it is not feasible to enforce an emission standard. CAA section 112(h)(2) defines the phrase “not feasible to prescribe or enforce an emission standard” as follows:

> [A]ny situation in which the Administrator determines that (A) a hazardous air pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

The work practice standards in this proposed rule are consistent with CAA section 112(h)(2)(B), because applying a measurement methodology to this class of sources is not technologically feasible due to the number of openings and possible emissions points.

The proposed work standards for emissions from storage tanks are evaporative losses that result from barometric pressure and ambient temperature changes, as well as filling and emptying operations. The flow rate of vent emissions from a tank is very low, except during filling. The concentration of HAP in the vent stream varies with the degree of saturation of HAP in the tank vapor space. The degree of saturation depends on such factors as HAP vapor pressure, tank size, and liquid throughput. Low flow rate and varying concentration make emission measurement impractical.

Emissions from equipment leaks are intermittent and fugitive in nature, so it is, therefore, not feasible to fully measure the mass emission rate from numerous potential leaks at an affected source.

3. How did EPA determine the pollutants for which to set emission limits?

The major HAP emitted from PVC production processes is the raw material, vinyl chloride. This is from the feed material processing prior to the reaction, and from post reaction processing (some of the VCM raw material remains unreacted during the polymerization process). For these reasons, we are setting emission limits for vinyl chloride.

PVC production processes also emit a variety of other HAP that may be contained in initiators or inhibitors of polymerization, additives, copolymer feedstocks, impurities, or formed during the polymerization process. As discussed earlier, these HAP include 1,3-butadiene, benzene, acetaldehyde, bis (2-ethylhexyl) phthalate, chloroform, chloroprene, ethylene dichloride, ethylidene dichloride, formaldehyde, iso-octane, methylene chloride, vinyl bromide, and vinylidene chloride.[3] PVCPU use different processes to produce a variety of resin products. Rather than setting individual emission limits for the wide variety of other HAP that can be found in PVC production processes, we are proposing a total HAP emission limit. A total HAP limit is appropriate because emissions from PVC facilities are comprised of mixtures of these HAP, and the control technologies used to control total HAP such as condensers and thermal oxidizers, achieve control of the individual HAP. Thermal oxidizers combust all organic HAP and convert them to carbon dioxide and water, with only trace amounts of organic compounds remaining. An acid gas scrubber removes any inorganic compounds that remain after combustion. Condensers, as a part of the vinyl chloride recovery system condense out organic compounds that are re-used in the process.

Process vents are often controlled using thermal oxidizers because they are effective at reducing emissions of vinyl chloride and organic HAP. However, the combustion of halogenated organic compounds results in formation of hydrogen chloride, which is a HAP, and can also result in the formation of CDD/CDF. We are proposing to set emission limits for HCl from process vents.

We are authorized to regulate the CDD/CDF class of HAP. While dibenzofuran and 2,3,7,8–TCDD are identified by name as HAP in CAA section 112, all CDD/CDF are polycyclic organic matter, and, as such, we have the authority to regulate these compounds. Under CAA section 112(d), the MACT floor standards are to be based on the average emissions performance of the best performing units for which the Administrator has emissions information. We received a substantial amount of emissions test data for CDD/CDF emissions through the CAA section 114 information collection, in which we sought CDD/CDF information from sampling runs that lasted about 4 hours each. While reported CDD/CDF emissions were below detectable levels in approximately 46 percent of the individual test runs for all CDD/CDF isomers reported, only 37 percent of three-run test averages were comprised of individual test runs where all runs were below detection limits. Therefore, a majority (63 percent) of the three-run tests detected some level of CDD/CDF. Furthermore, some of the emission tests detected most or all isomers at some level, and CDD/CDF emissions can be precisely measured for most control devices in the PVC production source category. Therefore, the statutory test for establishment of work practice standards—*i.e.,* that measurement of emissions is impracticable due to technological and economic limitations—is not met.

To make sure that the emission limits are set at a level that can be measured, we adjusted for variability using the upper prediction limit (UPL) approach, and we used the "three times MDL" approach (discussed elsewhere in this preamble) as a minimum level at which a CDD/CDF emission limit, on a toxic equivalency (TEQ) basis, is set. Rather than establishing work practice standards, but recognizing that emissions tend to be very low compared to more significant sources of CDD/CDF, such as incinerators, our approach to CDD/CDF requires an initial compliance test to demonstrate that the PVCPU meet the CDD/CDF standard, and additional compliance testing on an annual basis. Initial and continuous compliance requirements for process vents are discussed in section III.F.4 of this preamble. Furthermore, the CDD/CDF test method, EPA Method 23, requires that, for compliance purposes, non-detect values from runs should be reported and calculated as zeroes. Therefore, for purposes of compliance, there should be no concern about being unable to meet the standards because of the contribution of non-detect values. Consequently, we are proposing to set emission limits for CDD/CDF (on a TEQ basis) from process vents.

Cooling towers may emit a variety of VOC, depending on which process components may be leaking into the heat exchange system. The most prevalent HAP that may leak into a heat exchange system is vinyl chloride, which is also a VOC. The proposed compliance method for heat exchange systems measures total VOC and not speciated compounds. A detection of total VOC in the cooling water indicates leakage of organic HAP (including vinyl chloride) into the heat exchange system.

4. Solicitation of Comments

EPA solicits comment on the emission points proposed for regulation and the format of the proposed standards. We also solicit comments on the pollutants that we have proposed for regulation and how we grouped pollutants such as total HAP and dioxin.

C. How did EPA determine the proposed emission standards for area sources?

Under CAA section 112(d)(6), we are required to "* * * review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years." With this rulemaking, we are fulfilling our obligation to review, and revise, as necessary, the PVC Production area source standards. The 2007 NESHAP for PVC production area sources (40 CFR, part 63, subpart DDDDDD) are based on GACT. The area source NESHAP only set emission limits for vinyl chloride, which was the pollutant for which we needed the PVC Production area source category to meet our 90-percent obligation in CAA section 112(c)(3) and (k)(3)(B). We are proposing to tighten emission standards for vinyl chloride under CAA section 112(d)(6).

Under CAA section 112(d)(5), we may elect to promulgate standards or requirements for area sources "which provide for the use of generally available control technologies ["GACT"] or management practices by such sources to reduce emissions of hazardous air pollutants." In this proposed rule, we have determined that area source emission limits should be set for total HAP, CDD/CDF, and HCl, in addition to vinyl chloride, that are emitted from PVC production processes. As explained in other area source rules, the Agency has discretion to set standards for all urban HAP, in this case, CDD/CDF and total HAP, and to not limit standards to only the urban HAP for which the area source category was listed (*i.e.,* vinyl chloride). In addition to vinyl chloride, PVC production processes emit a variety of other HAP that may be contained in initiators or inhibitors of polymerization, additives, copolymer feedstocks, impurities, or formed during the polymerization process. The urban HAP reported to be emitted by the only existing PVC area source include 1,3-butadiene, ethylene dichloride, and methylene chloride. However, PVCPU can produce a variety of resin products over time which can influence the HAP emitted, so there is a potential that the area source could also emit other organic HAP reported at major source PVCPU (such as benzene, acetaldehyde, chloroform, and formaldehyde). Rather than setting individual emission limits for the wide variety of HAP that can be emitted by the area source PVC facility, we are proposing a total HAP emission limit (as we are for major sources). A total HAP limit is appropriate because emissions from the area source PVC facility are comprised of mixtures of these organic HAP, and the control technologies used to control total HAP achieve control of the individual organic HAP.

Although we recognize that we have met the 90-percent requirement of CAA section 112(c)(3), nothing precludes the Agency from regulating beyond the 90 percent with regard to the 30 urban HAP. We also believe it is appropriate to establish area source emission standards for HCl because, although not an urban HAP, it is formed as a product of combustion in controlling vents containing vinyl chloride and HAP. We solicit comment on our proposal to regulate these other HAP, beyond vinyl chloride since the Agency has already met its 90-percent statutory obligation under CAA section 112(c)(3) and 112(k)(3)(B).The 2007 GACT standards (40 CFR part 63, subpart DDDDDD) generally required area sources to continue to comply with the vinyl chloride emission limits, and other requirements in the part 61 NESHAP, which had been promulgated in 1976 (41 FR 46560, October 21, 1976). Therefore, the 2007 GACT standards did not achieve any emissions reductions.

In determining what constitutes GACT for this proposed rule, we considered the control technologies and management practices that are generally available to PVC area sources by examining relevant data and information, including information collected from the only known PVC area source. We also considered the standards proposed for major sources to determine if the control technologies and management practices are transferable and generally available to area sources. (See section III of this preamble for a summary of the MACT standards and sections IV.D through IV.F for further information on how the proposed MACT standards were determined.) As part of the GACT determination, we considered the costs and economic impacts of available control technologies and management practices on area sources.

As explained in greater detail below, we determined that GACT standards for area sources should be the same as the major source MACT standards, based on the similarity between production processes, emission points, emissions, and control technologies that are characteristic of both major and area source PVC production facilities. Due to the nature of the PVC production process and as reported in the information collected, the one existing area source has the same kinds of emission points (process vents, stripped resin, wastewater, equipment leaks, storage, heat exchangers, and other emission sources) and emits the same types of pollutants (identified in section IV.B of this preamble) as major sources. From the information that we collected during this rule development, which includes stack testing and site visits at both major and area sources, we now know that area sources have the same types of emissions, emission sources, and controls (see control information below) as major sources. Information that we have collected to support development of these proposed standards indicates that the one area source would be major, based on its potential to emit, except that the source has an enforceable requirement to operate its thermal oxidizer, which keeps it below major source levels. We are not aware of any planned new area sources.

In reviewing the data collected from major and area sources for development of the proposed rule, it is clear that the one PVC area source, like the major sources, is achieving vinyl chloride emission limits well below those required in the 2007 area source NESHAP (40 CFR part 63, subpart DDDDDD) and the part 61 NESHAP. The data collected from major and area sources are discussed in the memorandum, *Baseline Emission Estimates for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, which is available in the docket. The PVC area source uses the same control technologies as the major sources. For example, for process vents, the area source is using the same control technology (a thermal oxidizer in series with an acid gas scrubber) as most major sources. It is also using the same wastewater control (a wastewater stripper) used by major sources, and implementing the same type of equipment LDAR program as most major sources. The achievability of stripped resin HAP limits is a function of the resin-type subcategory (bulk, dispersion, or other) rather than the size of the PVCPU, or its location at a major or area source, and the PVC area source is already meting the proposed stripped resin MACT limits for the bulk PVC subcategory. In addition, the area source PVC plant is already meeting the proposed MACT limits for storage vessels and other emission sources (reactor and other component opening losses). Therefore, the control technologies and management practices used by major sources are generally available for area sources. In addition, the part 61 NESHAP for this industry requires all PVC production facilities to meet the same standards with no major or area source distinction, and because of the similarities between major and area sources, it is reasonable for them to meet the same emission standards under this proposed rule.

As part of the GACT determination, we analyzed the cost and emissions reduction for the area source to meet the proposed GACT standards. The overall annual cost is $332,351, and the annual emission reduction is 17.23 tons of HAP per year. For information on the methodology and more detailed results of this analysis, see the memorandum, *Costs and Emission Reductions of the Proposed Standards for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category,* in the docket. The economic impact analysis (see section V.D of this preamble) showed that there are no significant economic impacts.

For the aforementioned reasons, we have determined, pursuant to CAA sections 112(d)(5) and (6), that the control technologies and management practices necessary to meet the proposed major source emission standards are generally available for area sources in this source category. Accordingly, we are proposing the GACT level of control for area sources is the same as the MACT level of control for major sources, and that these area sources must meet the same standards as proposed in this rule for major sources.

Because the compliance dates in the proposed rule are 3 years after promulgation for existing area sources, and startup or the date of promulgation, whichever is later, for new area sources, area sources must continue to comply with the current provisions of 40 CFR part 63, subpart DDDDDD until they are required to comply with 40 CFR part 63, subpart HHHHHHH. However, on and after the proposed rule's compliance dates, existing and new PVC production area sources would no longer be required to comply with subpart DDDDDD. The proposed amendments to subpart DDDDDD make this clear. Amending subpart DDDDDD in this manner allows for continuous compliance with emission standards for PVC production area sources, while avoiding duplicative or burdensome requirements under more than one subpart.

EPA solicits comment on the proposed approach. We further solicit comment on whether we should issue MACT standards under CAA section 112(d)(2) and (3) in lieu of GACT standards under CAA section 112(d)(5) given the significant amount of additional information on the one area source that was not available to EPA at the time of the 2007 area source GACT promulgation.

D. How did EPA determine the MACT floors for existing major sources?

There are less than 30 sources in this source category. Therefore, EPA has based the MACT floor on the average of the best performing five sources. The determination of the best performing sources is discussed below.

In general, MACT floor analyses involve an assessment of the emissions from the best performing sources in a source category using the available emissions information. For each source category, the assessment involves a review of emissions data with an appropriate accounting for emissions variability. Various methods of estimating emissions can be used if the methods can be shown to provide reasonable estimates of the actual emissions performance of a source or sources.

Process vents and stripped resin. To develop the MACT floor emission limits for process vents (which includes all the vent streams from polymerization reactors, resin strippers, other process components prior to the resin stripping operation, VCM recovery system, slip gauges, loading and unloading lines, samples, and the wastewater collection and treatment system that are sent to a control device) and stripped resin, we ranked all the available emission concentration or resin concentration data for each pollutant: vinyl chloride, HCl, CDD/CDF, and total HAP for process vents; and vinyl chloride and total HAP for stripped resin. For this ranking, EPA included all major sources and the one synthetic area source. In previous rulemakings (*e.g.,* Brick NESHAP, 68 FR 26697–26698, May 16, 2003), EPA determined that including synthetic area sources in calculating the MACT floor for major sources is consistent with CAA section 112(d).

Concentration data for each pollutant were ranked from sources within the entire category (for process vents), or each subcategory (for resins) from lowest to highest. Based on information available to EPA, at all existing PVC production facilities, emissions from process vents are routed to a VCM recovery system. The vent stream from the recovery system is controlled either by a thermal oxidizer followed by a scrubber, or by an absorber. Emissions data were collected from emissions tests (consisting of three test runs) conducted at the outlet of the absorber, or the thermal oxidizer/scrubber control system. For each pollutant, the average of the three test runs was calculated for each facility. The average values (for each pollutant) from each facility were then ranked from lowest to highest to identify the best performing sources.

The CAA section 114 information collection required each facility to take samples of the stripped resin being produced daily over a 30-day period at the outlets of the resin stripper(s) and the resin dryer(s). The facilities analyzed the samples for the concentration(s) of HAP present in the resin, and then calculated the corresponding mass of each HAP present in the stripped resin, based on the analysis of the concentration in each of the samples. Facilities were asked to report both the mass of each HAP present in the sampled resin, and also the production rate for that resin. The test results revealed that the methods used to convert the HAP concentration to mass varied across the industry making the emissions information incomparable. For example, some companies used the production rate from the entire plant, while others used the production rate from the production lines being sampled. We did not initially request the HAP concentration values for the analyzed resins, but because of the many discrepancies in the mass of each HAP in the stripped resin, these HAP concentrations values were provided in a subsequent data submittal by the industry trade association. The industry trade association also provided additional detail related to the detection levels and specific test methods used during the sampling and analysis required by our CAA section 114 information collection. The data used to calculate the MACT floors for stripped resin were the HAP concentration data, and not the mass loading data. To determine the stripped resin limits, we calculated the average concentration levels for each pollutant at each facility. They were then ranked from lowest to highest for each facility in the subcategory to identify the best performing sources.

MACT floors were calculated for each pollutant regulated by the proposed rule. Because there are fewer than 30 sources in the source category (for process vents) and each subcategory (for stripped resins), the MACT floor for each pollutant was calculated from the average of the best performing (*i.e.,* lowest emitting) five sources. We took the numerical average of the five best performing sources, and accounted for variability, as discussed later in this section of the preamble.

Wastewater. All PVC production facilities are currently subject to the part 61 NESHAP inprocess wastewater standards. In the part 61 NESHAP, inprocess wastewater is defined as "* * * water which, during manufacturing or processing, comes into direct contact with vinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride, but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater. Gasholder seal water is not wastewater until it is removed from the gasholder." The part 61 NESHAP requires control of inprocess wastewater streams with a concentration of 10 ppmw or more vinyl chloride at the point of generation, and all facilities achieve this control by using a wastewater steam stripper. The average annual vinyl chloride concentrations at the outlet of the stripper were provided in survey responses for 13 out of 17 facilities. The average values from each facility were then ranked from lowest to highest to identify the best performing sources (that controlled streams with vinyl chloride concentrations greater than 10 ppmw at the point of generation). We took the numerical average of the five best performing sources, and accounted for variability, as discussed later in this section of the preamble. The predominant HAP in wastewater streams generated from this source category is vinyl chloride. All of the stripped wastewater streams contain vinyl chloride, which the survey data show comprises, on average, 95 percent of the HAP concentration in these streams. A review of the streams exiting the wastewater stripper, and streams that do not require control to meet the 10 ppmw vinyl chloride requirements (from the part 61 NESHAP) at the point of generation, does not indicate that additional control is used to reduce those compounds that are not easily removed by the wastewater stripper. We have documented this analysis in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and (PVC) Copolymers Production Source Category,* which is available in the docket. However, as explained in section IV.F of this preamble, we are proposing additional control of wastewater streams, based on other HAP (in additional to vinyl chloride as a beyond-the-floor option, and have included total HAP limits in the proposed rule.

Equipment leaks. For equipment leaks, we ranked the LDAR programs used at each affected PVC source from most stringent to least stringent, based on the leak definitions, monitoring frequencies, control requirements, and repair requirements. We then identified the LDAR programs employed by the best performing five sources. The results of this analysis showed that three out of the best performing five sources comply with 40 CFR part 63, subpart UU level 2 controls. The remaining sources comply with less stringent LDAR programs, such as 40 CFR part 61, subpart V. Additionally, existing sources are complying with the requirements of the part 61 NESHAP, that rotating pumps must be either sealless, equipped with double mechanical seals, or equivalent and all reciprocating pumps, rotating and reciprocating compressors, and agitators must be equipped with double mechanical seals or equivalent. If double mechanical seals or double outboard seals are used, HAP emissions must be minimized by maintaining the pressure between the two seals so that the leak occurs into the pump, compressor, or agitator by ducting any HAP between the two seals through a closed vent system to a control device.

Therefore, we are proposing that existing and new affected sources comply with the LDAR program requirements of the National Emission Standards for Equipment Leaks-Control Level 2 Standards, subpart UU of 40 CFR part 63, except for rotating or reciprocating pumps, compressors, and agitators. We are proposing that rotating pumps be sealless, equipped with double seals, or equivalent. Reciprocating pumps, reciprocating and rotating compressors, and agitator be equipped with double seals, or equivalent, as provided in 40 CFR 63.11915 of the proposed rule.

The part 61 NESHAP also requires installation of a vinyl chloride monitoring system for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system is a device that obtains air samples from one or more points continuously, and analyzes the samples with gas chromatography, infrared spectrophotometry, flame ion detection, or an equivalent or alternate method. These requirements from the part 61 NESHAP also constitute the MACT floor level of control.

The MACT floor analysis is available in the docket in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category.*

Storage vessels and handling operations. Two different types of storage vessels were identified from data collected from the PVC production industry: (1) Storage vessels storing material that are gases at ambient conditions (vapor pressures greater than 14.7 psia), and (2) storage vessels storing all other materials. The information collected showed that materials with vapor pressures greater than 14.7 psia are stored under pressure. A closed vent system that is routed to a control device is used at all facilities when filling the tank or purging the tank. All other materials are stored at all facilities in fixed roof tanks ranging in size from less than 5,000 gallons up to 30,000 gallons. These tanks primarily store methanol. The responses to the CAA section 114 information collection indicated that these tanks are not controlled.

The part 61 NESHAP, which covers ethylene dichloride, vinyl chloride, and PVC plants, has specific emission standards for handling operations (*i.e.,* loading and unloading of liquid products). However, PVC processes do not produce liquid products and do not have transfer rack loading operations. Handling a solid final product is unlikely to emit HAP, and the stripped resins limit already minimizes the HAP content of the final product. Consequently, no emission standards are being proposed for transfer operations. Unloading operations at PVC production facilities are considered part of process vents or storage, because emissions from unloading operations occur when charging storage vessels or reactor vessels, and any emissions are released from reactor vents or from the storage vessels. The emissions from these activities are subject to the process vent emission limits or storage vessel work practices. We are requesting comment on our proposed standards.

Heat exchange systems. For heat exchange systems, we requested information on each heat exchange system at PVC production facilities, including closed loop and once-through systems, existing programs and procedures to identify leaks of HAP into cooling water, leak action levels, and estimates of emissions from cooling towers. We also requested information on the regulations applicable to PVC production facilities. Leak action levels are the concentration of pollutants in the cooling water that indicates one or more heat exchangers is leaking process fluid, or other HAP-containing fluid into the circulating cooling water. The HAP contained in the cooling water can then be emitted from a cooling tower once the cooling water is exposed to the atmosphere. We received leak action levels for vinyl chloride, ethylene dichloride, vinylidene chloride, VOC, and non-methane hydrocarbons from twelve facilities. From the data submitted by the best performing facilities discussed above, we determined that leak action levels ranged from 30 ppbw to 5,000 ppbw for VOC and non-methane hydrocarbons. The best performers had an average leak action level of 38 ppbw for total VOC, which corresponds to a total strippable VOC concentration of 2.9 ppmv in stripping gas. Therefore, we are proposing a leak action level of 38 ppbw of total strippable VOC in cooling water, or 2.9 ppmv total strippable VOC in stripping gas with monthly monitoring is the MACT floor for existing sources. While the data provided indicate that facilities monitor on a variety of different frequencies, we are proposing monthly monitoring. The majority perform either weekly or monthly monitoring.

Other emission sources. The requirements from the part 61 NESHAP for reactor opening losses and component openings set numeric limits that must be met. The reactor opening loss from each reactor must not exceed 0.04 pound vinyl chloride/ton of PVC product. This requirement does not apply to pre-polymerization reactors in the bulk process. This requirement does apply to post-polymerization reactors in the bulk process, where the product means the gross product of pre-polymerization and post-polymerization.

The part 61 NESHAP also require that emissions from opening of other components, including pre-polymerization reactors used in the manufacture of bulk resins are to be minimized by reducing the volume of vinyl chloride to an amount which occupies a volume of no more than 2.0 percent of the equipment's containment volume, or 25 gallons, whichever is larger, at standard temperature and pressure. In the case of reactors used as strippers, the standard is based on the sum of allowable reactor opening losses, and the emissions limit for all downstream equipment (*e.g.,* the stripped resin limits). Furthermore, exhaust gasses from reactors and any vinyl chloride removed from process components must be ducted through a control system meeting specified outlet concentration limits. These requirements from the part 61 NESHAP constitute the MACT floor level of control from these emission sources.

1. Variability Calculation for MACT Floor Emission Limits Based on Emissions Test Data

For process vents, facilities measured the concentration of HAP in the vent stream exiting the control device used to control process vent streams. For stripped resin, facilities measured the concentration of HAP in the resin slurry exiting the resin stripper. For wastewater, facilities measured the concentration of vinyl chloride in the wastewater exiting the wastewater stripper. We used the emission concentration, resin concentration, and wastewater concentration data from the best performing sources to determine the MACT floor emission limits, with an accounting for variability. Data were collected from the CAA section 114 information collection, process vent emission testing results, resin sampling and analysis results, and additional data submissions by individual companies and the industry trade association that clarified, and/or corrected initial submissions, or that provided the same data in a different format (*e.g.,* concentration instead of mass in the case of stripped resin analysis results). We account for variability of the best-controlled source in setting floors, not only because variability is an element of performance, but because it is reasonable to assess best performance over time. The District of Columbia Circuit Court of Appeals has recognized that EPA may consider variability in estimating the degree of emission reduction achieved by best performing sources, and in setting MACT floors. See *Mossville Environmental Action Now* v. *EPA,* 370 F.3d 1232, 1241–42 (DC Cir. 2004).

In determining the MACT floor limits for process vents, stripped resins, and wastewater, we first determined the MACT floor, which is the level achieved in practice by the average of the best-performing five sources. We then assessed variability of the best performers by using a statistical formula designed to estimate a MACT floor level that is achieved by the average of the five best performing sources. Specifically, the MACT floor limit is an UPL calculated with the Student's t-test using the TINV function in Microsoft Excel©. The UPL has also been used in other EPA rulemakings (*e.g.*, the final NESHAP for Portland cement manufacturing, and the final NESHAP for industrial/commercial/institutional boilers) in accounting for variability. A prediction interval for a future observation is an interval that will, with a specified degree of confidence, contain the next (or some other pre-specified) randomly selected observation from a population. In other words, the prediction interval estimates what future values will be based upon present or past background samples taken. Given this definition, the UPL represents the value that we can expect the mean of three future observations (three-run average) to fall below, based upon the results of an independent sample from the same population. In other words, if we were to randomly select a future test condition from any of these sources (*i.e.*, average of three runs), we can be 99-percent confident that the reported level will fall at or below the UPL value. To calculate the UPL, we used the average (or sample mean) and sample standard deviation, which are two statistical measures calculated from the sample data. The average is the central value of a data set, and the standard deviation is the common measure of the dispersion of the data set around the average for a normally distributed data set.

We first determined the distribution of the emissions data for the best performing five sources within the source category for process vents, and within each subcategory for resins prior to calculating UPL values. To evaluate the distribution of the best performing dataset, we first computed the skewness and kurtosis statistics, and then conducted the appropriate small-sample hypothesis tests.

The skewness statistic (S) characterizes the degree of asymmetry of a given data distribution. Normally, distributed data have a skewness of 0. A skewness statistic that is greater (or less) than 0 indicates that the data are asymmetrically distributed with a right (or left) tail extending towards positive (or negative) values. Further, the standard error of the skewness statistic (SES) is given by SES = SQRT(6/N), where N is the sample size. According to the small sample skewness hypothesis test, if the skewness statistic (S) is greater than 2 times the SES, the data distribution can be considered non-normal.

The kurtosis statistic (K) characterizes the degree of peakedness or flatness of a given data distribution in comparison to a normal distribution. Normally, distributed data have a kurtosis of 0. A kurtosis statistic that is greater (or less) than 0 indicates a relatively peaked (or flat) distribution. Further, the standard error of the kurtosis statistic (SEK) is calculated by SEK = SQRT(24/N) where N is the sample size. According to the small sample kurtosis hypothesis test, if the kurtosis statistic (K) is greater than 2 times the SEK, the data distribution is typically considered to be non-normal.

We applied the skewness and kurtosis hypothesis tests to both the reported test values and the lognormal values of the reported test values. If the skewness (S) and kurtosis (K) statistics of the reported data set were both less than twice the SES and SEK, respectively, we classified the dataset as normally distributed. If neither of the skewness (S) and kurtosis (K) statistics, or only one of these statistics were less than twice the SES or SEK, respectively, then we conducted the skewness and kurtosis hypothesis tests for the natural log-transformed data. Then, we selected the distribution most similar to a log-normal distribution as the basis for calculating the UPL, based on EPA guidance documents. If both the reported values and the natural log-transformed reported values had skewness (S) and kurtosis (K) statistics that were greater than twice the SES or SEK, respectively, we selected the normally distributed dataset as the basis of the MACT floor to be conservative. If the results of the skewness and kurtosis hypothesis tests were mixed for the reported values, and the natural log-transformed reported values, we also chose the log-normal distribution to comply with EPA guidance. We believe this approach is more accurate and obtained more representative results than a more simplistic normal distribution assumption.

Because compliance with the MACT floor emission limit is based on the average of a three-run test, the UPL is calculated by:

$$UPL = \bar{x} + t(0.99, n-1) \times \sqrt{s^2 \times \left(\frac{1}{n} + \frac{1}{m}\right)} \qquad \text{(Eq. 1)}$$

Where:

n = Number of test runs.
m = Number of test runs in the compliance average.
s = Standard deviation.
x bar = Mean
t (0.99,n − 1) = T-statistic for 99-percent significance, and a sample size of n.

This calculation was performed using the following two Microsoft Excel© functions:

Normal distribution: 99-percent UPL = AVERAGE(Test Runs in Top 5) + [STDEV(Test Runs in Top 5)x TINV(2 x probability, n − 1 degrees of freedom)*SQRT((1/n)+(⅓))], for a one-tailed t-value (with 2 x probability), probability of 0.01, and sample size of n.

Lognormal distribution: 99-percent UPL = EXP{AVERAGE(Natural Log Values of Test Runs in Top 5) + [STDEV(Natural Log Values of Test Runs in Top 5) × TINV(2 × probability, n-1 degrees of freedom)* SQRT((1/n) + (⅓))]}, for a one-tailed t-value (with 2 x probability), probability of 0.01, and sample size of n.

We followed these procedures for determining the variability of process vent emission limits (for vent streams from polymerization reactors, resin strippers, other process components prior to the resin stripper, VCM recovery system, and wastewater collection and treatment system). For the stripped resin variability analysis, the same procedures were followed with one change. The variability calculation for stripped resins uses the average of the sampling results for each day of the 30-day sampling period (*e.g.*, essentially 30 runs instead of three runs for process vents). As a result, the 99-percent UPL equation uses a compliance average value of 30 instead of 3.

For wastewater, we followed the same procedures for determining variability. A variability analysis was performed on the top five facilities. The skewness and kurtosis statistics were calculated (following the same procedure as for process vents and resins) to determine the top 5 data set distribution. The 99-percent UPL value was calculated for both the normal and log-normal distribution using the same formula as process vents and resins, except that the number of samples in the data set was set to 5 (the top 5 fraction remaining values), and the number of samples in the compliance average was set to 1 (because the data provided by facilities only included one value for any wastewater concentration).

2. Incorporation of Non-Detect Data

Non-detect values constitute more than 50 percent of the process vent emissions data for CDD/CDF and HCl, and approximately 42 percent of the stripped resin data for all reported HAP. For these pollutants, we developed a methodology to account for the imprecision introduced by incorporating non-detect data into the MACT floor calculation.

At very low emission levels for which emissions tests result in non-detect values, the inherent imprecision in the pollutant measurement method has a large influence on the reliability of the data underlying the MACT floor emission limit. Because of resin sample and emission matrix effects, laboratory techniques, sample size, and other factors, method detection levels normally vary from test to test for any specific test method and pollutant measurement. The confidence level that a value measured at the detection level is greater than zero is about 99 percent. The expected measurement imprecision for an emissions value occurring at or near the method detection level is about 40 to 50 percent. Pollutant measurement imprecision decreases to a consistent level of 10 to 15 percent for values measured at a level about 3 times the method detection level.[6]

We are using an approach to account for measurement variability when significant numbers of non-detect measurements are included in the dataset that starts with defining a method detection level that is representative of the data used in the data pool.

The first step in this approach is to identify the highest test-specific method detection level reported in a data set that is also equal to or less than the average emission calculated for the data set. This approach has the advantage of relying on the data collected to develop the MACT floor emission limit, while, to some degree, minimizing the effect of a test(s) with an inordinately high method detection level (*e.g.,* the sample volume was too small, the laboratory technique was insufficiently sensitive, or the procedure for determining the detection level was other than that specified).

The second step is to determine the value equal to 3 times the representative method detection level, and compare it to the calculated MACT floor emission limit. If 3 times the representative method detection level is less than the calculated MACT floor emission limit, we would conclude that measurement variability is adequately addressed, and we would not adjust the calculated MACT floor emission limit. If, on the other hand, the value equal to 3 times the representative method detection level is greater than the calculated MACT floor emission limit, we would conclude that the calculated MACT floor emission limit does not account entirely for measurement variability. We, therefore, use the value equal to 3 times the method detection level, in place of the calculated MACT floor emission limit, to ensure that the MACT floor emission limit accounts for measurement variability and imprecision. The same procedures were followed for non-detect values for the resin information, but the analysis was done for 30 days worth of samples from each facility rather than three test runs. We request comment on this approach to incorporation of non-detect data in the MACT floor.

We followed the following additional procedures for CDD/CDF TEQ basis limits. To calculate a limit on a TEQ basis, first, we identified non-detect values on an individual CDD/CDF congener basis. There are 17 CDD/CDF congeners used to calculate TEQ values. For facilities that reported some, but not all CDD/CDF congeners as non-detect, we calculated the mean of the non-detect values for each CDD/CDF congener. Then we multiplied the toxic equivalency factor (TEF) for each congener by the mean to determine the TEQ detection level for each CDD/CDF congener. For facilities that reported all CDD/CDF congeners as non-detect, we multiplied each non-detect value by the respective TEF factor. We used the sum of the detection level toxic equivalencies for each of the 17 CDD/CDF congeners of interest to calculate a TEQ detection level sum value. The TEQ sum was then used as the detection limit for the test run. We used the second step discussed above to set the limit. The methodology is described in detail in the memorandum MACT Floor *Analysis for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, and is available in the docket. We solicit comment on these procedures. For wastewater, non-detect values were not incorporated into the variability analysis because they were not included with the facility submitted survey information.

3. Existing Source MACT Floor Results for Process Vents, Stripped Resins, and Wastewater

We identified the best performing five sources in the category (for process vents and wastewater), or each subcategory (for stripped resins), and each pollutant (*e.g.*, vinyl chloride, total HAP, HCl, and CDD/CDF). We then compiled the individual test run and sampling concentration data for these sources, and conducted a statistical analysis to calculate the average and account for variability, and, thereby, determine the MACT floor emission limit.

Table 4 of this preamble summarizes results of the UPL analysis and the MACT floor emission limits for existing process vents for each pollutant. Table 5 of this preamble presents the results for stripped resins. A detailed discussion of the MACT floor methodology is presented in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, and is available in the docket.

TABLE 4—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC PROCESS VENTS AT EXISTING SOURCES [c,d]

Pollutant (and units of measure)	99% UPL	MACT floor emission limit [a]
Vinyl chloride (ppmv)	0.319	0.32
Hydrogen chloride (ppmv)	140.17	150
Total HAP (ppmv)	11.3	12 [b]

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[6] American Society of Mechanical Engineers, *Reference Method Accuracy and Precision (ReMAPJ: Phase 1, Precision of Manual Stack).*

TABLE 4—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC PROCESS VENTS AT EXISTING SOURCES [c,d]—Continued

Pollutant (and units of measure)	99% UPL	MACT floor emission limit [a]
CDD/CDF (TEQ) (ng/dscm)	0.0183	0.023 [b]

[a] Limits were rounded up to two significant figures.

[b] Limit result of detection limit variability analysis.

[c] ppmv = parts per million by volume dry at 3-percent oxygen. ng/dscm = nanograms per dry standard cubic meter at 3-percent oxygen.

[d] Process vents limits apply at the outlet of the control device which controls closed vent streams from polymerization reactors, resin strippers, other process components prior to the resin stripper(s), certain storage vessels, VCM recovery systems, wastewater collection and treatment system, slip gauges, unloading and loading lines, and samples.

TABLE 5—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC STRIPPED RESINS AT EXISTING SOURCES (PPMW)

Pollutant	Bulk resins		Dispersion resins		All other resins	
	99% UPL	MACT floor emission limit [a]	99% UPL	MACT floor emission limit [a]	99% UPL	MACT floor emission limit [a]
Vinyl chloride	7.1	7.1	54.8	55	0.471	0.48
Total HAP	167.3	170	100.1	110	33.3	76 [b]

[a] Limits were rounded up to two significant figures.

[b] Limit result of detection limit variability analysis.

For wastewater that exceeds the 10 ppmw vinyl chloride limit at the point of generation, we determined that the 99-percent UPL is 0.109 ppmw at the outlet of the wastewater stripper and the MACT floor level of control rounded up to two significant figures is 0.11 ppmw. The analysis is documented in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, and is available in the docket. Wastewater streams below the 10 ppmw vinyl chloride limit at the point of generation, must remain below the 10 ppmw limit.

Results of the MACT floor analysis for heat exchange systems, storage vessels, equipment leaks, and other emission sources are discussed in section IV.D of this preamble.

E. How did EPA determine the MACT floors for new major sources?

Similar to the MACT floor process used for existing sources, the approach for determining the MACT floor for new sources is based on available emissions information. Using such an approach to develop the MACT floor emission limits for process vents and stripped resins for each pollutant, we ranked all the available emission concentration, stripped resin concentration, or wastewater concentration data for each pollutant from sources within the entire category (for process vents and wastewater), or each subcategory (for stripped resin) from lowest to highest. As discussed in section IV.D of this preamble, data from all major sources and the one synthetic area source were included in this ranking. See section IV.D of this preamble for more information about the emission concentration and resin concentration data. Based on this ranking, we calculated the MACT floor limits for each pollutant, and for the summation of pollutants making up the total HAP value, based on the performance (of the lowest emitting (best controlled)) source for each pollutant in the category or subcategory.

We calculated the MACT floor limits accounting for variability for new sources using the same formula that we used for existing sources. As discussed in section IV.D of this preamble, we account for variability of the best-controlled source in setting floors, not only because variability is an element of performance, but also because it is reasonable to assess best performance over time. If we do not account for this variability, we would expect that even the best-controlled similar source would potentially exceed the floor emission levels part of the time, which would mean that their variability was not properly accounted for when setting the MACT floor. We calculated the MACT floor based on the UPL (upper 99th percentile), as described in section IV.D from the average performance, based on emission testing and resin sampling of the best controlled similar source, Students t-factor, the total variability of the best controlled source, and incorporating the non-detect procedures.

This approach reasonably ensures that the emission limit selected as the MACT floor adequately represents the level of control actually achieved by the best controlled similar source, considering ordinary operational variability. Tables 6 and 7 of this preamble present the analysis summaries, and the new source MACT floor limits for PVC process vents and stripped resins, respectively.

A detailed discussion of the MACT floor methodology is presented in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and Copolymer (PVC) Production Source Category*, and is available in the docket.

TABLE 6—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC PROCESS VENTS AT NEW SOURCES [c,d]

Pollutant (and unit of measure)	99% UPL	MACT floor emission limit [a]
Vinyl chloride (ppbv)	1.53	3.2 [b]

TABLE 6—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC PROCESS VENTS AT NEW SOURCES [c,d]—Continued

Pollutant (and unit of measure)	99% UPL	MACT floor emission limit [a]
Hydrogen chloride (ppmv)	0.162	0.17
Total HAP (ppmv)	0.217	0.22
CDD/CDF (TEQ)(ng/dscm)	0.00428	0.0087 [b]

[a] Limits were rounded up to two significant figures.

[b] Limit result of detection limit variability analysis.

[c] ppbv = parts per billion by volume dry at 3-percent oxygen. ppmv = parts per million by volume dry at 3-percent oxygen. ng/dscm = nanograms per dry standard cubic meter at 3-percent oxygen.

[d] Process vents limits apply at the outlet of the control device which controls closed vent streams from polymerization reactors, resin strippers, other process components prior to the resin stripper(s), VCM recovery systems, certain storage vessels, slip gauges, loading and unloading lines, samples, and the wastewater collection and treatment system.

TABLE 7—SUMMARY OF MACT FLOOR EMISSION LIMITS FOR PVC STRIPPED RESINS AT NEW SOURCES (PPMW)

Pollutant	Bulk resins		Dispersion resins		All other resins	
	99% UPL	MACT floor emission limit [a]	99% UPL	MACT floor emission limit [a]	99% UPL	MACT floor emission limit [a]
Vinyl chloride	7.1	7.1	40.3	41	0.191	0.20
Total HAP	167.3	170	57.8	58	25.1	42 [b]

[a] Limits were rounded up to two significant figures.

[b] Limit result of detection limit variability analysis.

The best performing wastewater source is complying with the part 61 NESHAP wastewater standards. The part 61 NESHAP requires that inprocess wastewater streams that exceed a vinyl chloride concentration limit of 10 ppmw, at the point of generation, be controlled. The best-performing source achieves this control by using a wastewater steam stripper and achieves a vinyl chloride concentration at the outlet of the wastewater stripper of 0.0060 ppmw. The analysis is documented in the memorandum, *MACT Floor Analysis for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, and is available in the docket. We are proposing that all new wastewater streams meet a vinyl chloride limit of 10 ppmw, at the point of generation. We are also proposing that new wastewater streams that exceed the 10 ppmw vinyl chloride limit at the point of generation, reduce vinyl chloride to a wastewater stripper outlet concentration of 0.0060 ppmw.

For equipment leaks, the best performing source complies with the LDAR requirements for 40 CFR part 63, subpart UU and the existing part 61 NESHAP LDAR requirements for rotating and reciprocating pumps and compressors, and agitators. For storage vessels, the information collected showed that at all sources, including the best performing source, materials with vapor pressures greater than 14.7 psia are stored under pressure; a closed vent system that is routed to a control device is used at all facilities when filling the tank, or purging the tank. All other materials are stored at all facilities in fixed roof tanks.

The current requirements from the part 61 NESHAP, for reactor opening losses and equipment openings, set standards that must be met. In the case of reactors used as strippers, the standard is based on the sum of allowable reactor opening losses, and the standard for all downstream equipment (e.g., the stripped resin limits). All affected sources are required to meet the part 61 NESHAP requirements.

For heat exchange systems, the best performing source has a leak action level of 30 ppbw of total strippable VOC in the cooling water or 2.3 ppmv of total strippable VOC in the stripping gas, with twice-daily monitoring, which is, therefore, the MACT floor for heat exchange systems at new sources.

EPA solicits comment on the proposed MACT floors for new PVC production facilities.

F. How did EPA analyze beyond-the-floor options and determine MACT?

1. Beyond-the-Floor Analysis for Existing Sources

Once the MACT floor determinations were done for each category or subcategory, we considered various regulatory options more stringent than the MACT floor levels of control (*e.g.,* control technologies or work practices that could result in lower emissions). A detailed description of the beyond-the-floor consideration is in the memorandum, *Analysis of Beyond MACT Floor Controls for the Polyvinyl Chloride and Copolymer (PVC) Production Source Category,* and is available in the docket.

We first identified regulatory requirements for each emission point that would be more stringent than the MACT floor level of control, and determined whether they were technically feasible. If the more stringent requirements were technically feasible, a cost and emission impacts analysis was conducted for applying them.

Process Vents. The control technologies that would be needed to achieve the proposed MACT floor levels for process vents (*e.g.,* enhanced vinyl chloride recovery, activated carbon injection, and fabric filters, in combination with existing controls, such as incinerators and acid gas scrubbers) are generally the most effective controls available for reducing vinyl chloride, HCl, total organic HAP, and dioxins/furans. Therefore, no beyond-the-floor regulatory options were identified for HAP from process vents.

Equipment Leaks. For equipment leaks, we are proposing to require that facilities implement the LDAR program from 40 CFR part 63, subpart UU, which is generally equivalent to the HON, and which we identified as the most effective control of emissions from equipment leaks. We are also proposing that facilities implement the equipment requirements for rotating and reciprocating pumps and compressors and agitators from part 61 NESHAP, which are leakless equipment. Therefore, no beyond-the-floor HAP emission reduction approaches were identified for equipment leaks.

Heat Exchange Systems. For heat exchange systems, the proposed existing source MACT floor level of control is a LDAR program with a leak action level of 38 ppbw of total strippable VOC in the cooling water, or 2.9 ppmv of total strippable VOC in the stripping gas and monthly monitoring. We analyzed a beyond-the-floor option of requiring a lower leak action level for the cooling water of 25 ppbw. Average costs and emission reductions were calculated on a per leak basis. The results of the analysis showed that 5.78 tpy of total VOC would be reduced for an annual cost of $175,630, resulting in a cost of $30,386 per ton of VOC reduced. Consequently, we determined it was not appropriate to go beyond-the-floor considering the cost and emission reductions of this option.

Storage Vessels. For storage vessels, the CAA section 114 information collection data indicate that methanol is the primary material stored in fixed roof tanks ranging from 5,000 gallons to 30,000 gallons associated with PVCPU. We analyzed a beyond-the-floor option of requiring storage vessels meeting specific vapor pressure and storage capacity parameters specified in 40 CFR part 60, subpart Kb to comply with the control requirements of 40 CFR part 63, subpart WW. The subpart Kb standard in 40 CFR 60.112(b), requires material be stored in controlled tanks if: (1) The material stored has a maximum true vapor pressure greater or equal to 0.75 psia, and the storage vessel has a capacity equal to, or greater than 40,000 gallons, or (2) the material stored has a maximum true vapor pressure greater or equal to 4 psia, and the storage vessel has a capacity equal to, or greater than 20,000 gallons, but less than 40,000 gallons. Subpart Kb also requires materials above 11.1 psia to be stored in pressure tanks. The beyond-the-floor controls include specific sealing mechanisms for internal or external floating roofs or routing streams from a fixed roof vessel through a closed vent system to a control device meeting a 95-percent or greater reduction in volatile organic emissions. We calculated the emission reduction and cost of retrofitting subpart WW controls on model fixed roof tanks meeting subpart Kb vapor pressure and size parameters. The results of the analysis showed that cost-effectiveness ranged from $2,000 to $12,000 per ton of HAP reduced by this option, depending on the number of turnovers assumed. Considering the cost and emissions reduction, we have determined that it is appropriate to propose this beyond-the-floor requirement for storage vessels. Based on information submitted by PVC production facilities, we are not aware of any storage vessels from affected sources that meet the capacity levels (20,000 gallons or 40,000 gallons), and store material that meet the vapor pressure levels. Therefore, we estimate that there are no additional costs and emission reductions for this option for storage vessels currently at PVCPU. However, the proposed beyond-the-floor standards for storage vessels will ensure that, if there are any storage vessels (now or in the future) that meet the capacity and vapor pressure criteria, they will be controlled. This analysis is documented in the memorandum, *Analysis of Beyond MACT Floor Controls for the Polyvinyl Chloride and Copolymer (PVC) Production Source Category,* and is available in the docket.

Five gas holders are currently in use by three facilities, and are a part of the vinyl chloride recovery system. In these recovery systems, process vents originating from polymerization reactors, resin strippers, and wastewater strippers (among others) are routed in closed vent systems to a separate process to recover unreacted VCM from the vent gasses. Gas holders provide intermediate storage of vent gasses which contain VCM before the VCM is recovered, compressed, and recycled back into the process. Gas holders are cylindrical tanks with a floating bell top. The tanks contain water that serves as a seal between the contained gas and the ambient air outside of the tank. The pressure inside the gas holder changes as gasses are fed to, or removed from, the tank. The water inside the gas holder is in constant contact with the vinyl chloride laden gas and can approach saturation. The primary source of emissions from gas holders is from the water seal on the gas holder that is continually exposed to the ambient atmosphere. In addition, as the gas holder bell rises, a thin film of water that contains vinyl chloride remains on the outer surface of the bell. Methods to reduce emissions may include keeping the gas holder water level at the lowest possible level, using either floating objects on the surface of the water seal or using a thin layer of oil, or using a windshield around the gas holder water seal.

We do not have information from emission tests, control information, or cost information on gas holders. We are requesting comment and additional information on emissions, controls, and costs of controls for this emission source.

Wastewater. For wastewater, EPA has previously determined for the HON that a beyond-the-floor option of treating streams with HAP concentrations greater than 1,000 ppmw (of 40 CFR part 63, subpart G, Table 9 HAP), and annual average flow rates greater than 10 l/min measured at the point of determination (as specified in 40 CFR part 63, subpart G), is cost-effective ($670/ton in 2010 dollars). The analysis previously conducted for the HON is applicable to PVC, because the cost-effectiveness of wastewater treatment depends on the wastewater flow and HAP concentration, not on the type of process unit from which the wastewater stream is generated. The same treatment systems (steam stripping or biotreatment), and the same measures to prevent atmospheric emissions from the systems conveying the wastewater streams to the treatment systems, are applicable to wastewater streams that meet these criteria. Furthermore, 35 percent of PVC production facilities are co-located with chemical manufacturing process units that are subject to the HON, and could potentially route PVC wastewater streams (if any) that meet the total HAP criteria to existing HON wastewater treatment processes to meet these limits. Consequently, we are proposing that streams with HAP concentrations greater than 1,000 ppmw (of 40 CFR part 63, subpart G, Table 9 HAP), and annual average flow rates greater than 10 l/min be treated as specified in the HON requirement as a beyond-the-floor HAP emissions reduction approach. Based on information submitted by PVC production facilities, we are not aware of any wastewater streams from affected sources that are above these flow rate and concentration limits. Therefore, we estimate that there are no additional costs or emission reductions because all facilities are below the 1,000 ppmw total HAP concentration and 10 l/min flow rate limits. However, the limit will ensure that, if there are any wastewater streams meeting the total HAP and flow rate criteria, they will be controlled.

Additionally, wastewater generated during maintenance activities is not currently regulated by 40 CFR part 61, subpart F. We requested and received limited information on vinyl chloride and HAP concentrations in maintenance wastewater streams. We are requesting comment on whether maintenance wastewater should have separate limits from inprocess wastewater. We are also soliciting additional data relevant to setting a maintenance wastewater MACT standard.

Other Emission Sources. We did not identify more stringent control requirements than what we are proposing to require at the MACT floor to reduce emissions from reactor and equipment openings. The proposed MACT standard requires that, prior to being opened, emissions from reactor and process component openings must be reduced to a specified level and ducted through a closed vent system and control device that would meet the proposed emission limits for process vents. We did identify an additional work practice that could be used to minimize emissions from all PVC production facilities. One facility identified placing filter bags, strainers, and other removable separation media in closed and sealed containers that remain closed and sealed unless being actively filled or emptied to minimize emissions. However, we do not have information on the costs and emission reductions of this work practice, or the procedures followed. We request comments, and any further information, including cost and performance data, on this practice, and other work practices that are being followed by the industry to minimize emissions from other emission sources.

Stripped Resin. For stripped resins, we determined that facilities would use additional steam in existing equipment to reduce the concentrations of residual vinyl chloride and total HAP to meet the limits for resins being proposed. We believe that additional stripping in existing equipment beyond what would be required to meet the proposed limits would not be technically feasible as the incremental additional concentration reductions would be either negligible or zero, and existing sources may not be able to further reduce concentrations to the beyond-the-floor levels without degrading product. However, additional HAP emission reductions could be achieved by routing vents from process components downstream of the resin stripper (e.g., resin dryers and centrifuges) to an incinerator. We then determined the cost and emission reductions of applying a 98-percent efficient incinerator to the process vents downstream of the resin stripper (*e.g.*, dryer and centrifuge vents). The results of the analysis are shown in Table 8.

Summary of Beyond the Floor Analysis. Table 8 of this preamble summarizes the costs of the MACT floor emission level (referred to as option 1), and one beyond-the-floor option for stripped resins (option 2). Option 2 is the same as option 1 plus the installation of a thermal oxidizer on vent streams from processes downstream of the resin stripper.

TABLE 8—SUMMARY OF COSTS FOR PVCPU TO COMPLY WITH MACT CONTROL OPTIONS FOR EXISTING SOURCES (2010$)

Option	Total capital costs ($million)	Total annualized costs ($million/Yr)[a, b]
1—MACT Floor	16	20
2—Option 1 + additional control of resin	370	129

[a] No beyond-the-floor options were analyzed for costs for process vents, equipment leaks, and other emission sources. The beyond-the-floor options for wastewater and storage vessels do not result in costs, because no sources currently meet the beyond-the-floor applicability requirements for these emission points.

[b] Calculated using a 7-percent discount factor.

Table 9 of this preamble summarizes the emission reductions of each pollutant for the MACT control options analyzed.

TABLE 9—SUMMARY OF EMISSION REDUCTIONS FOR PVCPU TO COMPLY WITH THE MACT CONTROL OPTIONS FOR EXISTING SOURCES

Pollutant	Option 1 (MACT floor) (tpy)	Option 2 (Option 1 + additional control of stripped resin) (tpy)[a]
CDD/CDF TEQ	2.45E–08	2.45E–08
HCl	33	33
Vinyl chloride	135	176
Total HAP	1,570	2,618

[a] No beyond-the-floor options were analyzed for process vents, equipment leaks, and other emission sources. The beyond-the-floor options for wastewater and storage vessels do not result in emission reductions, because no sources currently meet the beyond-the-floor applicability requirements for these emission points.

The results provided in Tables 8 and 9 of this preamble were calculated using data gathered for the PVC industry. We estimate that applying additional control to reduce emissions from stripped resins would result in a total annualized cost of $129 million, and would achieve vinyl chloride and total HAP reductions of 176 tpy and 2,618 tpy, respectively. The incremental cost-effectiveness of adding a thermal oxidizer to control emissions from process vents downstream of the resin stripper was estimated to be $2.7 million per ton of vinyl chloride reduced, and over $100,000 per ton of total HAP reduced. Consequently, we determined it was not appropriate to go beyond the floor, considering the cost and emission reductions of this option. The results of the beyond-the-floor analysis are documented in the memorandum, *Analysis of Beyond MACT Floor Controls for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category,* and is available in the docket. Table 1 in this preamble summarizes the proposed emissions limits for existing PVCPU.

2. Beyond-the-Floor Analysis for New Sources

Except for wastewater and storage vessels, we did not identify any technologies or methods to achieve HAP emission limits more stringent than the MACT floor limits, or work practices for new units, based on the best performing PVC facilities. The control technologies and work practices necessary to achieve the MACT floor levels are generally the most effective controls available.

For wastewater, EPA has previously determined for the HON that a beyond-the-floor option of treating streams with HAP concentrations greater than 1,000 ppmw (of 40 CFR part 63, subpart G, Table 9 HAP), and annual average flow rates greater than 10 l/min is cost-effective for new sources ($1,300/ton in 2010 dollars for new sources). For the same reasons discussed in section IV.F.1 of this preamble, the analysis previously conducted for HON is applicable to PVC because the cost- effectiveness of wastewater treatment depends on the wastewater flow and HAP concentration, not on the type of process unit the wastewater stream is coming from. As discussed in section IV.F.1 of this preamble, we are requesting comment on whether maintenance wastewater should have separate limits from inprocess wastewater, and requesting data relevant to setting a maintenance wastewater MACT standard.

We also concluded, in section IV.F.1 of this preamble, that it was cost-effective ($2,000 to $12,000 per ton of HAP) to require floating roof tanks or fixed roof tanks routed to a closed vent system, and control device for storage vessels that (1) have a storage capacity equal to or greater than 40,000 gallons (151 cubic meters), and store material with maximum true vapor pressures greater or equal to 0.75 psia, or (2) have a storage capacity equal to or greater than 20,000 gallons, and less than 40,000 gallons, and store material with maximum true vapor pressures greater or equal to 4 psia. Consequently, the beyond-the-floor options for wastewater and storage vessels are the only ones being proposed for new sources. Tables 1 and 3 of this preamble summarizes the proposed emissions limits for new PVCPU.

EPA solicits comment on the proposed beyond-the-floor determinations.

G. How did EPA select the compliance and monitoring requirements for the proposed rule?

We are proposing testing, monitoring, notification, recordkeeping, and reporting requirements that are adequate to assure continuous compliance with the requirements of the proposed rule. These requirements are described in detail in various sections in the proposed rule. We solicit comment on the proposed compliance and monitoring requirements. We selected these requirements based upon our examination of the information necessary to ensure that the emission standards and work practices are being followed, and that emission control devices and process components are maintained and operated properly. These proposed requirements impose on facilities the minimum burden that is necessary to ensure compliance with the proposed rule.

1. How did we select the compliance and monitoring requirements for storage vessels?

For storage vessels, we are proposing that you meet the operating, inspection, repair, and maintenance requirements in 40 CFR 63.11910 of the proposed rule, as discussed in section III.F.1 of this preamble. We are proposing work practice standards to ensure that pressure vessels and fixed roof storage tanks are being operated correctly and maintained. Pressure vessels, during purging and filling, are required to meet the closed vent system and control device requirements specified in 40 CFR 63.11910(c)(1) of the proposed rule. Annual monitoring of potential leak interfaces on pressure vessels using EPA Method 21 is proposed to be used to verify there are no leaks. Any detectable emissions would be considered a violation of the rule. These requirements ensure that pressure vessels do not vent to the atmosphere. We are requesting comment on this requirement.

Floating roof storage vessels would be required to comply with the operation, maintenance, and inspection requirements of 40 CFR part 63 subpart WW. The requirements of subpart WW are in many EPA standards, such as the Miscellaneous Organic NESHAP (MON), and provide more current compliance requirements that better reflect the current state of operations for the industry. The subpart WW provisions for floating roof tanks would ensure that floating roof vessels operate correctly by requiring periodic inspection of the floating roofs.

If you choose to route vent streams from fixed roof tanks to a closed vent system and control device, we are proposing that the control device must reduce the inlet VOC emissions by 95 percent, or greater. This requirement is based on the provisions of 40 CFR part 60, subpart Kb, which provides reduction requirements for fixed roof vessels routed to a closed vent system, and control device in 40 CFR 60.112b(a)(3)(ii). These are achievable reductions for storage tanks that have been previously implemented, as in subpart Kb. You would also be required to meet the requirements for closed vent systems and control devices in 40 CFR 63.11925 and 40 CFR 63.11930 of the proposed rule. These requirements would limit the VOC emissions released to the atmosphere from storage tanks.

All types of storage vessels are required to be equipped with closure devices. You would also be required to visually inspect the fixed roof tanks and their closure devices for defects initially, and at least once per calendar year, with the exception of parts of the fixed roof that you determine are unsafe to inspect.

For parts that you have determined are unsafe to inspect, you would be required to prepare and maintain written documentation that identifies each part and explains why the part is unsafe to inspect, and to conduct inspections during times when it is safe to do so (as frequently as practicable, but not required more than once per calendar year). We have included provisions intended to clarify the required intervals between inspections, because we have received comments during development of prior rules that some requirements could be subject to different interpretations. For example, a requirement to conduct inspections “annually” could be read to mean in every calendar year, no later than the date 1 year after the previous inspection, or in the same month every year. To address concerns about when inspections must be conducted if the storage vessel is out of service on the date when the inspection must be completed, instead of proposing to require inspections “annually,” we are proposing a requirement to conduct inspections at least “once per calendar year.” For fixed roof parts that are unsafe to inspect, an inspection may be delayed until an alternative storage vessel can be made available, and the vessel to be inspected can be emptied and temporarily removed from service.

The inspection must be conducted before the fixed roof storage vessel is returned to service. These provisions are provided in 40 CFR 63.11910(a)(3) of the proposed rule.

We have included fixed roof repair provisions in 40 CFR 63.11910(a)(4) of the proposed rule for when a defect is identified. These requirements are based on the requirements in 40 CFR 63.1063(e) of 40 CFR part 63, subpart WW. We have made one clarification to the conditions under which delay of repair extensions are allowed. You must make a first attempt to repair the defect no later than 5 calendar days after detection, and complete the repair as soon as possible, but no later than 45 calendar days after detection. The delay of repair provisions would allow delay beyond 45 calendar days if you determine that the repair requires emptying or temporary removal from service of the storage vessel, and no alternative storage capacity is available at the site. You would be required to repair the defect the next time alternative storage capacity becomes available, and the storage vessel can be emptied, or temporarily removed from service.

Under 40 CFR 63.11910(c) of the proposed rule, pressure vessels, as defined in proposed 40 CFR 63.12010, may not vent to the atmosphere, but must instead be vented back into the process, or vented to a closed vent system and control device. These provisions have been included in 40 CFR 63.11910(c) of the proposed rule to ensure that the pressure vessel stream is not inadvertently directed to the atmosphere.

2. How did we select the compliance and monitoring requirements for equipment leaks?

For equipment leaks, we are proposing in 40 CFR 63.11915 of the proposed rule, as discussed in section III.F.2 of this preamble, that you meet the LDAR requirements of 40 CFR part 63, subpart UU, which defines leak thresholds and monitoring frequencies for each type of equipment. These requirements are already being used at several PVCPU and in other source categories, and have been shown to be effective in minimizing emissions from leaking equipment.

Release events from PRD have the potential to emit large quantities of HAP. We are concerned that a large number of these releases that occur may not be identified and controlled in a timely manner and may be due to repeat problems that have not been corrected. The end result would be significant increases in annual HAP emissions. To address this issue, we are proposing that you be required to install electronic indicators on each PRD that would be able to identify and record the time and duration of each pressure release.

3. How did we select the compliance and monitoring requirements for heat exchangers?

For heat exchange systems, we are proposing in 40 CFR 63.11920 of the proposed rule to include requirements equivalent to the primary monitoring, recordkeeping, and reporting requirements that were finalized for heat exchange systems for Refinery MACT 1 sources (74 FR 55669), including a LDAR program that requires you to conduct sampling and analyses using the TCEQ Modified El Paso Method or EPA Method 8021B, no less frequently than monthly for existing sources and twice-daily (12-hour intervals) for new sources. We are proposing a leak action level of 38 ppbw of total strippable VOC in the cooling water, or 2.9 ppmv of total strippable VOC in the stripping gas for existing sources, and a leak action level of 30 ppbw of total strippable VOC in the cooling water, or 2.3 ppmv of total strippable VOC in the stripping gas for new sources. We are also proposing a delay of repair leak action level of 380 ppbw of total strippable VOC in cooling water, or 29 ppmv of total strippable VOC in the stripping gas for new and existing sources.

In contrast to a water sampling method such as EPA Method 601 or 624, the TCEQ Modified El Paso Method provides similar detection limits, as speciated water analysis and simulates the actual losses that might occur from cooling water. Further, the Modified El Paso Method helps overcome potential losses of highly VOC during water sampling. The sensitivity of the Modified El Paso Method using flame ionization detector (FID) analysis is typically 0.1 to 0.5 ppmv (as methane) in the stripped air, with 1.0 ppmv (as methane) being typical. We note that the Modified El Paso Method has been demonstrated at numerous sources as an effective means of identifying leaks in heat exchange systems, and the method has been used extensively for over 20 years.

We considered the variety of systems that may be monitored, and whether the Modified El Paso Method should be used exclusively. For the PVC Production source category, a limited number of compounds may be present in the process stream for which analytical methods are available that can detect these compounds at low concentrations. Additionally, for streams containing highly chlorinated organic compounds such as vinyl chloride, these alternative methods may provide lower detection limits and better sensitivity than using the Modified El Paso Method (which uses a flame ionization detector). We believe that the specific analytical method used is not critical to the emission limitations achieved, provided that the method can accurately quantify pollutant concentrations at levels far enough below the leak action level that the method could accurately indicate whether or not a leak exists. As such, we are proposing to include a direct water analysis method in the proposed rule. We are proposing different sampling locations and leak repair provisions for heat exchange systems, including a cooling tower (*i.e.,* closed-loop recirculation systems) and once-through heat exchange systems (*e.g.,* river or brackish water), as specified in 40 CFR 63.11920 of the proposed rule. For closed-loop recirculation systems, sampling could be conducted at the combined return line at the inlet to the cooling tower prior to exposure to air. Alternatively, sampling could be conducted in the "exit" lines (*i.e.,* water lines returning the water from the heat exchangers to the cooling tower) from an individual heat exchanger or bank of heat exchangers. Therefore, if the cooling tower services multiple heat exchangers, you could elect to monitor only the heat exchangers in HAP service, monitor at branch points that combine several heat exchanger exit lines, or monitor at the combined stream for the entire closed-loop recirculation system. These provisions allow flexibility and potentially reduce the cost of monitoring, while still ensuring leak detection. For closed-loop recirculation heat exchange systems, the impacts of the potential dilution of the leak from aggregation with other process cooling waters are minimized due to the physical limitations of quantity of water that can be processed by a single cooling tower.

A once-through heat exchange system consists of one or more heat exchangers servicing an individual process unit and all water lines to and from the heat exchanger. As such, sampling for once-through heat exchange systems must be conducted in exit lines from individual heat exchangers, or group of heat exchangers associated with a single process unit. If once-through heat exchange systems are not limited to a single process unit, a once-through heat exchange system could include all heat exchangers at the entire facility. The potential to aggregate all cooling water at a facility prior to sampling would reduce the effectiveness of the leak monitoring methods, and would allow HAP leaks to remain undetected, based solely on the dilution effect from the large quantity of water processed at the facility. Commenters are encouraged to provide additional information and suggestions for sampling alternatives that would allow flexibility, but would include a small enough number of individual heat exchangers to provide meaningful measurements in once-through systems.

We are also proposing to allow the owner or operator of a once-through heat exchange system to monitor both the inlet and outlet of an individual heat exchanger or group of heat exchangers associated with a single process unit, and compare the difference between those two measurements to the leak action level to determine if a leak is detected. The use of a differential leak is provided for once-through systems because the water supply for these systems (often river water or ocean water) may contain higher background concentrations of hydrocarbons than the purchased water that is used in closed-loop recirculation systems.

The proposed rule allows facilities to use more frequent or continuous monitoring as an alternative, but only requires monthly monitoring.

4. How did we select the compliance and monitoring requirements for process vents?

As described in section III.F.4 of this preamble, we are proposing in 40 CFR 63.11925 through 40 CFR 63.11950 of the proposed rule, performance testing, CEMS, and CPMS monitoring requirements to demonstrate initial and continuous compliance with the limits in Tables 1 and 2 of the proposed rule for process vents.

To demonstrate compliance with the total organic HAP emission limits, we are proposing in 40 CFR 63.11945, and in Table 9 of the proposed rule, to require initial and annual performance tests using EPA Method 25A to measure THC. Because measuring THC is more practical than measuring total organic HAP using available test methods, we are proposing to allow compliance with the total organic HAP limit to be determined by measuring THC. We calculated the THC level that equates to the total HAP limit from the THC data reported for the same best performing five sources used to calculate the total organic HAP limit. During the initial performance test, you would be required to establish an operating limit for the control device operating parameters specified in 40 CFR 63.11935 and 40 CFR 63.11940 (e.g., incinerator temperature). You would then demonstrate continuous compliance with the total HAP limit by staying within the operating limit established for each operating parameter. In 40 CFR 63.11925 of the proposed rule, we are providing the option of using a THC CEMS meeting the specifications in 40 CFR Part 60, appendix B, Performance Specification 8A as an alternative to CPMS. CEMS have been widely used to demonstrate that air pollution control devices are being operated correctly to ensure emission limitations are being met.

To demonstrate initial compliance with the CDD/CDF and HCl emission limits, under 40 CFR 63.11925, 40 CFR 63.11935, 40 CFR 63.11940, and 40 CFR 63.11945 of the proposed rule, compliance would be determined by performance tests using EPA Method 18 for vinyl chloride, EPA Method 23 for CDD/CDF, and either EPA Method 26 or 26A for HCl. Continuous compliance with the vinyl chloride, CDD/CDF and HCl emission limits would be demonstrated using continuous monitoring of control device parameters (e.g., liquid flow rate and pH for scrubbers, and temperature and carbon injection rate for activated carbon injection, temperature for thermal oxidizers), and annual performance tests for CDD/CDF and vinyl chloride. While parameter monitoring has historically been a cost-effective monitoring option, CEMS are increasingly being used in many different situations, and provide more accurate data for demonstrating continuous compliance. As specified in proposed 40 CFR 63.11925, after EPA publishes final performance specifications for CEMS for HCl and CDD/CDF, new sources would be required to use CEMS instead of annual testing and CPMS for these pollutants, and existing sources would be given the option to use CEMS.

To demonstrate compliance for process vents, we are also proposing in 40 CFR 63.11925 of the proposed rule that you must meet the requirements of proposed 40 CFR 63.11930 for each closed vent system, and proposed 40 CFR 63.11940 for each control device, including each incinerator, absorber, adsorber, condenser, sorbent injection system, fabric filter, or other control device.

The requirements we are proposing for closed vent systems are based on the requirements of 40 CFR part 63, subpart SS, although we have revised and incorporated new requirements, as discussed below.

The standards for closed vent systems in 40 CFR 63.11930 of the proposed rule include bypass monitoring requirements, and leak monitoring and inspection requirements. We are proposing that for all closed vent systems, except those systems in vacuum service, as defined in 40 CFR 63.12010, for bypasses that do not contain an automatic flow control valve and have manual lock-and-key flow control valves, anytime the manual valve is opened, it would result in a violation. If you install and maintain a bypass flow indicator equipped with an automatic alarm system, then any indication of flow through the bypass is a violation, but the action of opening the valve is not a violation. These provisions are to ensure that any flow directed to a bypass is detected and addressed by the operator. We have not included monitoring exemptions for difficult-to-inspect, or unsafe-to-inspect equipment. Instead, we are proposing that you maintain and follow a written plan that requires inspecting the equipment designated as unsafe-to-inspect as frequently as practical during safe-to-inspect times, but not more frequently than the otherwise applicable annual inspection schedule.

For the leak monitoring and inspection requirements in 40 CFR 63.11930 of the proposed rule, we have added provisions based on 40 CFR part 60, subpart VVa, which require a calibration drift assessment for the leak detection instrument at the end of each monitoring day. The post-test calibration drift assessments constitute good practice, and are a useful quality assurance/quality control tool to validate the proper operation of the leak detection instrument during the monitoring period, and, hence, the measurement data.

We are proposing that closed vent systems that operate in vacuum service, as defined in 40 CFR 63.12010 of the proposed rule, are not required to perform the leak monitoring and inspection requirements required for other closed vent systems. However, if you choose to operate in vacuum service under 40 CFR 63.11930 of the proposed rule, you would be required to install a pressure gauge and an automatic alarm system capable of alerting an operator immediately when the closed vent system is no longer in vacuum service. Unless you meet the monitoring and inspection requirements of 40 CFR 63.11930 of the proposed rule for closed vent systems, which are not in vacuum service, if a loss of vacuum alarm is triggered, you would be in violation of the rule, and would be required to bring the closed vent system back into vacuum service. These requirements ensure that vacuum systems remain in compliance with the rule and do not leak.

For process vents that must demonstrate compliance using a control device and continuous monitoring using a CPMS, the parameters that would be monitored for each type of control device are specified in proposed 40 CFR 63.11940. The monitoring requirements for each control device were primarily based on requirements from 40 CFR part 63, subpart SS, and 40 CFR part 63, subpart FFFF, with additional requirements added for new control devices, and significant revisions for adsorbers, which are discussed in this section.

In 40 CFR 63.11940 of the proposed rule, we have revised the former 40 CFR part 63, subpart SS requirements for "carbon adsorbers" to apply to "adsorbers," and modified the applicability to pertain to adsorbers containing carbon, zeolite, adsorbing polymers, or any other adsorbents. This change reduces the need for owners and operators to request alternative controls, and for EPA to review these requests. The proposed rule has been written to address known performance issues for adsorbers, including the regeneration frequency of the adsorbent, the effectiveness of regeneration, the life of the adsorbent material before replacement is required, mechanical issues with the system operation, including valve sequencing, and for non-regenerative systems, the expected life of the bed before replacement. We are proposing several monitoring approaches for non-vacuum systems, regenerative adsorption systems, and non-regenerative adsorption systems, based on requirements from 40 CFR part 63, subparts G, SS, GGG, MMM, FFFF, GGGGG, and BBBBBB, as well as approaches which have been reviewed and approved by EPA through alternative monitoring requests, and which we believe have universal applicability.

Under 40 CFR 63.11925(b) of the proposed rule, we are not allowing process vents to be routed to a flare due to the potential for acid-gas formation from combustion of halogenated streams at PVCPU. We have included in 40 CFR 63.11940 of the proposed rule compliance and monitoring requirements for control devices not covered by 40 CFR part 63, subpart SS, including sorbent injection systems and fabric filters. The compliance requirements for sorbent injection systems were based on the NESHAP for the Portland cement manufacturing industry, and the compliance requirements for fabric filters were modeled after the Pesticide Active Ingredient Production NESHAP (40 CFR part 63, subpart MMM, as referenced by the MON), and the Portland Cement Manufacturing NESHAP (40 CFR part 63, subpart LLL).

We have also included requirements from the MON for batch processing operations, as discussed in section IV.G.8 of this preamble.

5. How did we select the compliance requirements for wastewater?

As specified in 40 CFR 63.11965 of the proposed rule, we are proposing that you must conduct an initial test for wastewater streams from the affected source to determine the vinyl chloride concentration, the total HAP concentration (including all HAP listed in Table 9 of 40 CFR part 63, subpart G), and the flow rate. The concentration tests would be conducted using EPA Method 107 for sampling, in combination with RCRA Method SW–8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* and EPA Method 305, *Measurement of Emission Potential of Individual Volatile Organic Compounds in Waste,* for analysis. EPA Method 107 is commonly used in this source category as both a sampling and analytical method for vinyl chloride. We are proposing to require RCRA Method SW–8260B for analysis of HAP except for methanol because it provides concentrations for vinyl chloride, as well as other HAP. We are proposing to require EPA Method 305 for analysis of methanol. Prior to testing, you would be required to submit a test plan for EPA approval that includes your proposed method for analysis using these methods.

For wastewater, you would be required to test for vinyl chloride at the point where the wastewater is generated, and test for Table 9 HAP at the point of determination, as defined in 40 CFR part 63, subpart G. The HAP most prevalent in wastewater, and in the largest amounts for this source category, is vinyl chloride, which is volatile, and is easily stripped. Testing at the point of generation is necessary to get an accurate assessment of the amount of vinyl chloride in the wastewater stream before it potentially volatizes in the downstream wastewater processes.

Wastewater streams that contain less than 10 ppmw vinyl chloride (at the point of generation), and wastewater streams that either contain less than 1,000 ppmw total HAP, or have a flow rate less than the 10 l/min criteria (at the point of determination, as defined by 40 CFR part 63, subpart G), are not required to further reduce emissions, but must remain below these levels. You would test periodically at the same locations, and using the same test methods described above, to verify that the stream concentration stays below these levels. Wastewater streams would be tested monthly. We believe these are the least burdensome intervals to test for wastewater, considering the variety of resin grades that may be produced, while still ensuring compliance with the proposed emission limits. There are also proposed requirements in 40 CFR 63.11975(d) of the rule for demonstrating that you remain below the 10 l/min flow rate criterion. These would be required for wastewater streams that are not required to apply additional control because they are below the 10 l/min flow rate criterion. The flow rate determination procedures are consistent with the HON, which is the basis of the flow rate criterion.

Under 40 CFR 63.11970 and 40 CFR 63.11975 of the proposed rule, you would conduct an initial compliance test and monthly testing to demonstrate compliance with the wastewater stripper outlet concentration limit. In addition, during your performance test, you would be required to establish operating ranges for your wastewater vacuum stripper, including steam-to-feed ratios and wastewater stripper temperature, and also the vacuum level measured in the column for wastewater vacuum strippers. These operating parameters are good indicators of wastewater stripper performance and proper operation. You would use a CPMS to continuously monitor control device operating parameters to demonstrate that you meet these operating parameter limits.

If the wastewater stream exceeds the 1,000 ppmw HAP concentration (measured at the point of determination, and based on the list of HAP in Table 9 of 40 CFR part 63, subpart G), and exceeds an annual average flow rate of 10 l/min (as measured at the same point of determination), then you would be required, under 40 CFR 63.11970(a)(2) of the proposed rule, to comply with the subpart G Group 1, wastewater suppression and treatment requirements, and conduct the compliance testing and monitoring required in subpart G. As discussed in section IV.F of this preamble, this proposed requirement is a beyond-the-floor option selected because it was determined to be cost-effective in the HON. Consequently, we are proposing that you comply with the HON testing and monitoring requirements for these streams.

6. How did we select the compliance requirements for stripped resin?

As discussed in section III.F.6 of this preamble, we are proposing in 40 CFR 63.11960 of the proposed rule that you conduct initial and continuous performance tests to demonstrate compliance with the proposed vinyl chloride limits and monthly performance tests to demonstrate compliance with the proposed total HAP limits for stripped resin. The tests would be conducted at the outlet of the resin stripper as the stripped resin exits the stripper for continuous processes and immediately after stripping for batch processes. You would be required to use EPA Method 107 in combination with RCRA Method SW–8260B, and to include in your test plan a proposed method for analysis using these methods. Affected sources are currently measuring vinyl chloride using EPA Method 107 to comply with limits in the part 61 NESHAP, and would continue to do so under this proposed rule. Initial and subsequent sampling for vinyl chloride would follow the same requirements as those in part 61 NESHAP. You would be required to sample for total HAP initially, and then on a monthly basis to demonstrate continuous compliance. We are proposing that RCRA Method SW–8260B also be used to analyze for concentrations of organic HAP in the stripped resin other than vinyl chloride. You would be required to submit the test plan for EPA approval.

The MACT floor limits for total HAP were based on averages of 30 days of resin sampling. We are proposing that samples be taken monthly, and compliance be demonstrated, based on a 12 month rolling average of the 12 most recent months. In the first 12 months following your demonstration of initial compliance, you would be required to demonstrate continuous compliance with the total HAP emission limit on a monthly basis, using the same procedures required for initial compliance. We request comment on adding an alternative to allow you, in these first 12 months, to use data collected in the year preceding your initial compliance to demonstrate continuous compliance. You would also be required to conduct your monthly monitoring for total HAP on a day that you are producing the resin grade of which you manufacture the most, based on total mass of resin produced in the month preceding the sampling event. To allow you flexibility in selecting this sampling day, sampling is required monthly, with a minimum of 12 sampling events per year, but individual sampling events may be 3 to 5 weeks apart.

In addition, during your initial performance test, you would be required to establish operating ranges for your resin steam or vacuum stripper, including steam-to-feed ratios and stripper temperature, and also the vacuum level measured in the component for vacuum strippers. You would use a CPMS to continuously monitor control device operating parameters. The proposed monitoring, recordkeeping, and reporting requirements are necessary to ensure compliance with the proposed emission limits.

7. How did we select the compliance requirements for other emission sources?

Other emission sources include reactor and other component opening losses. Reactor exhaust gas streams and any HAP removed from process component openings must be ducted through a closed vent system and control device. Therefore, we are proposing the same compliance requirements for these emission sources as those requirements for process vents.

8. How did we select the compliance requirements for batch process operations?

We are proposing compliance language, based on the MON, to accommodate batch process vents. The MON primarily references the batch process vent provisions in the Pharmaceuticals Production NESHAP (40 CFR part 63, subpart GGG), but includes some changes and exceptions when specifying how to calculate uncontrolled emissions from batch process vents (including emission episode equations), as well as requiring performance testing under worst-case conditions. Although the MON uses a hierarchy to determine applicable requirements for combined emission streams (*e.g.,* it allows you to comply with only the batch process vent requirements for combined batch and continuous process vents), 40 CFR 63.11945(b)(3) of the proposed rule requires that you meet all requirements for each emission stream type in a combined emission stream (*i.e.,* both continuous and batch process vent requirements must be met). The proposed rule is written in this way to ensure compliance for each emission stream.

Additionally, we revised the purging emission episode equation included in 40 CFR 63.1257(d)(2)(i)(B) (Equation 12). This equation specifies that the partial pressure of HAP shall be assumed to be 25 percent of the saturated value if the purge flow rate is greater than 100 standard cubic feet per minute (scfm). We revised this requirement to incorporate iterative methodology equations from the Miscellaneous Coating Manufacturing NESHAP (40 CFR 63.8050(c)(1)(ii)), requiring you to determine a HAP-specific saturation factor, and are calling the episode “gas sweep of a partially filled vessel,” in lieu of “purging.” This revision is in accordance with Volume II, Chapter 16 of the *Emission Inventory Improvement Program* (EIIP), issued August 2007. This change includes site-specific values where possible, and ensures that the calculated emissions are more accurate.

H. How did EPA determine compliance times for the proposed rule?

Section 112 of the CAA provides limits for the dates by which affected sources must comply with the emission standards. New or reconstructed units must be in compliance with the final rule immediately upon startup, or the date the final rule is published in the **Federal Register**, whichever is later. The proposed rule allows existing sources 3 years to comply with the final rule, which is the maximum period allowed by the CAA. We believe that 3 years for compliance is necessary to allow adequate time to design, install, and test control systems, as well as obtain permits for the use of add-on controls. We welcome comment on the proposed compliance dates.

I. How did EPA determine the required records and reports for this proposed rule?

Section 112 of the CAA requires the EPA to develop regulations that include requirements for reporting the results of testing and monitoring performed to determine compliance with the standards. You would be required to comply with the applicable requirements in the NESHAP General Provisions, subpart A of 40 CFR part 63, as referenced in Table 5 of the proposed rule. We evaluated the General Provisions requirements, and included those we determined to be the minimum notification, recordkeeping, and reporting necessary to ensure compliance with, and effective enforcement of, this rule, as proposed. The reports that we are proposing to be required are presented in 40 CFR 63.11985 of the proposed rule.

We also reviewed the necessary records that need to be kept to demonstrate continuous compliance with the proposed emission limits and work practice standards. These recordkeeping requirements are specified either directly in the proposed rule, in the General Provisions to 40 CFR part 63, or in other rules to which the proposed rule refers. Recordkeeping requirements are found in the proposed 40 CFR 63.11990. We are proposing that records be kept for 5 years, in a form suitable and readily available for EPA review. We are proposing that records be kept on site for 2 years, and you can keep the records off site for the remaining 3 years.

The General Provisions include specific requirements for notifications, recordkeeping, and reporting. The reports are specified in proposed 40 CFR 63.11985.

The notification of compliance status report required by 40 CFR 63.9(h) must include certifications of compliance with rule requirements. The excess emissions and continuous system performance report and summary report required by 40 CFR 63.10(e)(3) of the NESHAP General Provisions (referred to in the rule as a compliance report) would be required to be submitted semiannually for reporting periods during which there was an exceedance of any emission limit, or a monitored parameter, or a deviation from any of the requirements in the rule occurred, or if any process changes occurred, and compliance certifications were reevaluated.

The part 61 NESHAP requires that, within 10 days of any discharge from a PRD to the atmosphere, the owners or operators must submit to the Administrator a report containing information on the source, nature, and cause of the discharge, the date and time of the discharge, duration of the discharge, the approximate emissions during the discharge, and the method used for determining the HAP emitted (*i.e.,* the calculation method). The report must also include a description of the actions taken to prevent the discharge, and measures adopted to prevent future discharges. We are proposing to extend this recordkeeping and reporting requirement to violations associated with bypasses, pressure vessels and closed vent systems in vacuum service as discussed in section III.H of this preamble. We solicit comment on the proposed recordkeeping and reporting requirements.

J. What are the startup, shutdown, and malfunction provisions?

Consistent with *Sierra Club* v. *EPA,* 551 F.3d 1019 (DC Cir. 2008), EPA is proposing standards in this rule that apply at all times. In proposing the standards in this rule, EPA has taken into account startup and shutdown periods, and, for the reasons explained below, has not proposed different standards for those periods. We solicit comment on this approach.

We expect facilities can meet the proposed emission standards during startup and shutdown. For process vents, control is achieved by routing vents to thermal oxidizers, or vent gas absorbers. During startup, it is common practice to start the thermal oxidizers using natural gas, before process vent emissions are routed to them, so that the oxidizers are at the required temperature prior to receiving the vent streams and will accomplish the same level of control that they would during normal operation. Vent gas absorbers operate such that vent streams can be routed to them at all times. For wastewater streams and stripped resins, we expect that during startup, streams normally fed to the wastewater stripper and resin stripper are recycled back to the process until the correct stripper steam to feed ratio is established. At such time, the feed streams are no longer recycled back to the process, and are then sent through the stripper to remove HAP to the required levels. For batch processes, startups and shutdowns are a part of their normal daily operations. For the other emission points, the proposed rule requires work practices that can be followed during startup and shutdown. Additionally, we are proposing that process components, such as reactors, cannot be opened except when the process or process component is shut down. The proposed rule includes several requirements to reduce emissions during openings.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a "sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner * * *." (40 CFR 63.2). EPA has determined that malfunctions should not be viewed as a distinct operating mode, and, therefore, any emissions that occur at such times do not need to be factored into development of CAA section 112(d) standards, which, once promulgated, apply at all times. In *Mossville Environmental Action Now* v. *EPA,* 370 F.3d 1232, 1242 (DC Cir. 2004), the Court upheld as reasonable standards that had factored in variability of emissions under all operating conditions. However, nothing in CAA section 112(d) or in case law requires that EPA anticipate and account for the innumerable types of potential malfunction events in setting emission standards. *See, Weyerhaeuser* v. *Costle,* 590 F.2d 1011, 1058 (DC Cir. 1978) ("In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.").

Further, it is reasonable to interpret CAA section 112(d) as not requiring EPA to account for malfunctions in setting emissions standards. For example, we note that CAA section 112 uses the concept of "best performing" sources in defining MACT, the level of stringency that major source standards must meet. Applying the concept of "best performing" to a source that is malfunctioning presents significant difficulties. The goal of best performing sources is to operate in such a way as to avoid malfunctions of their units.

Moreover, even if malfunctions were considered a distinct operating mode, we believe it would be impracticable to take malfunctions into account in setting CAA section 112(d) standards for PVC and copolymer production. As noted above, by definition, malfunctions are sudden and unexpected events, and it would be difficult to set a standard that takes into account the myriad different types of malfunctions that can occur across all sources in the category. Moreover, malfunctions can vary in frequency, degree, and duration, further complicating standard setting.

In the event that a source fails to comply with the applicable CAA section 112(d) standards, as a result of a malfunction event, EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. EPA would also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, "sudden, infrequent, not reasonably preventable," and was not instead "caused in part by poor maintenance or careless operation." 40 CFR 63.2 (definition of malfunction).

Finally, EPA recognizes that even equipment that is properly designed and maintained, can sometimes fail and that such failure can sometimes cause an exceedance of the relevant emission standard. (See, *e.g., State*

Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown (Sept. 20, 1999); *Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions* (Feb. 15, 1983)). EPA is therefore proposing to include an affirmative defense to civil penalties for exceedances of emission limits. See 40 CFR 63.12010 of the proposed rule (defining "affirmative defense" to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding). We also are proposing other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; the source must prove by a preponderance of the evidence that it has met all of the elements set forth in 40 CFR 63.11895 of the proposed rule. (See 40 CFR 22.24). The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonable preventable and not caused by poor maintenance and or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that excess emissions "[w]ere caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner * * *." The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with 40 CFR 63.11895 of the proposed rule and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that "[r]epairs were made as expeditiously as possible when the applicable emission limitations were being exceeded * * *" and that "[a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health * * *." In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with section 113 of the CAA (see also 40 CFR 22.77).

V. Impacts of the Proposed PVC Rule

The impacts presented in this section include the impacts for PVC production facilities to comply with the proposed rule, and with the requirements of other subparts referenced by the proposed rule.

A. What are the air impacts?

We have estimated the potential emission reductions that may be realized through implementation of the proposed emission standards. Table 10 of this preamble summarizes the emission reductions for compliance for each pollutant and emission point. The analysis is documented in the memorandum, *Costs and Emission Reductions of the Proposed Standards for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category,* and is available in the docket.

TABLE 10—EMISSION REDUCTIONS OF THE PROPOSED PVC AND COPOLYMERS PRODUCTION STANDARDS

Emission point	Pollutant emission reductions (tpy)			
	Vinyl chloride	Total HAP	CDD/CDF (TEQ)	HCl
Process vents	0.085	2.26 [a]	2.45E–08	33
Stripped resin	129	853	0	0
Wastewater	0.40	0.40	0	0
Equipment leaks	0	680	0	0
Storage vessels	0	0	0	0
Other emission sources	0	0	0	0
Heat exchange systems	5.3	35	0	0
Total	135	1,570	2.45E–08	33

[a] Emission reductions for process vents are stated as total organic HAP; this value does not include HCl reductions.

We estimated emission reductions of the proposed rule for each emission point. For all emission points, we first calculated emissions at the current level of control for each facility (referred to as the baseline level of control), and at the proposed level of control. We calculated emission reductions as the difference between the proposed level and baseline.

For process vents, we calculated baseline emissions from the measured HAP concentrations at the outlet of the control devices, and HAP emissions using the proposed emission limits, in combination with the vent stream flow rates measured during emission tests.

For stripped resins, we calculated emissions assuming that all the HAP remaining in the resin would eventually be emitted from processes downstream of the resin stripper. This assumption results in a calculation of the potential emissions at the baseline stripped resin concentration levels, and proposed MACT concentration levels. Emissions were calculated from the HAP concentration in the stripped resin, and the resin production rate.

For wastewater, we estimated the emissions from the HAP concentration in the uncontrolled wastewater streams, in the controlled wastewater streams, and the wastewater flow rates or generation rates.

For equipment leaks, we estimated emissions for the baseline LDAR program in use at each facility, and the proposed equipment leaks requirements using model equipment counts, average emission factors for leaking equipment provided in previous EPA studies, and control efficiencies for LDAR programs provided in previous EPA studies. Model equipment counts were used because actual equipment counts were not collected in survey questionnaires sent to the industry. The survey requested information only on regulatory LDAR programs currently in place at each facility, and the costs for the facility to conduct the LDAR program.

We calculated emissions from heat exchange systems from emissions information provided in information survey responses provided by affected sources. Emission reductions from heat exchange systems were calculated assuming that, once the LDAR program was in effect, emissions would be eliminated due to the low leak action level that is being proposed.

B. What are the cost impacts?

We have estimated compliance costs for all existing sources to add the necessary controls, monitoring devices, inspections, recordkeeping, and reporting requirements to comply with the proposed rule. Based on this analysis, we anticipate an overall total capital investment of 15.6 million, with an associated total annualized cost of $19.7 million (using a discount rate of 7 percent), in 2010 dollars, as shown in Table 11 of this preamble. We do not anticipate the construction of any new PVCPU in the next 5 years, and, therefore, there are no new source cost impacts.

TABLE 11—COST IMPACTS OF THE PROPOSED PVC AND COPOLYMERS PRODUCTION STANDARDS

Emission Point	Total capital cost (million 2010$)	Total annualized cost (million 2010$/yr)
Process vents	12.5	3.4
Stripped resin	0	14.5
Wastewater	0	0.791
Equipment leaks	3.14	0.638
Storage vessels	0	0
Other emission sources	0	0
Heat exchange systems	0	0.309
Total	15.6	19.7

We calculated costs to meet the proposed level of control for each emission point. For process vents, we estimated costs to meet the proposed level of control for PVCPU that do not currently meet the proposed emission limit, based on reported data. For such PVCPU that currently use incinerators in combination with acid-gas scrubbers, we estimate the cost of compliance through the use of enhanced vinyl chloride recovery using a refrigerated condenser to reduce the quantity of vinyl chloride combusted to meet the vinyl chloride, HCl, and total organic HAP emission limits. If a PVCPU needed only to meet the HCl emission limit, we estimated the cost of compliance using a packed bed scrubber to reduce HCl emissions. To meet the CDD/CDF levels, costs were based on application of activated carbon injection in combination with a fabric filter. For PVCPU that currently use an absorber for vinyl chloride recovery, cost calculations were based on routing the vent gas from the absorber to existing incinerators. Costs calculations also included capital and annual costs for testing and monitoring of vinyl chloride, HCl, total organic HAP, and CDD/CDF.

For PVCPU not currently meeting the proposed stripped resin limits, costs to meet the proposed level of control were based on additional steam being used in the resin stripper to further remove vinyl chloride and total HAP from the resin. Testing and monitoring costs were also included in the costs to meet the proposed level of control. We are aware that there may be concerns about applying additional heat to the resin because it might degrade the product. Therefore, we are requesting comment on this cost assumption. We are also requesting data on the performance of resin strippers when additional steam is added, and the limits that resin strippers can achieve without degrading the product. We note that the proposed limits for stripped resins were calculated, based on the resin analysis data provided by surveyed facilities, indicating that some facilities are already achieving the emission limits without affecting their products.

For PVCPU not currently meeting the proposed wastewater stripper outlet concentration limit, costs to meet the proposed level of control were based on additional steam being used in the wastewater stripper to further remove vinyl chloride. Annual costs also include additional testing and monitoring required to meet the proposed level of control.

For equipment leaks, annual costs to conduct LDAR programs were provided by PVC production facilities in responses to data collection surveys. The average cost difference between PVCPU complying with 40 CFR part 63, subpart UU and PVCPU complying with other equipment leak standards, such as 40 CFR part 61, subpart V, was applied to each PVCPU that did not already meet the proposed level of control (*i.e.*, 40 CFR part 63, subpart UU). We estimated additional costs for an electronic PRD indicator, based on data collected for other EPA projects. We calculated costs for complying with the proposed level for heat exchange systems, based on information collected for other EPA projects. No costs were estimated for the remaining emission points, because all affected sources already meet the proposed levels of control for them.

The analysis is documented in the memorandum, *Costs and Emission Reductions of the Proposed Standards for the Polyvinyl Chloride and Copolymers (PVC) Production Source Category*, and is available in the docket.

C. What are the non-air quality health, environmental, and energy impacts?

We anticipate affected sources would need to apply additional controls to meet the proposed emission limits. These controls, such as steam strippers and scrubbers, use water. We estimate an annual requirement of 380 million gallons per year of additional wastewater would be generated as a result of additional steam stripping of PVC resin and water used for scrubbers. We also anticipate 106 tpy of dust from activated carbon usage that will need to be disposed.

The energy impacts associated with meeting the proposed emission limits would consist primarily of additional electricity needs to run added or improved air pollution control devices. By our estimate, we anticipate that an additional 5,900 megawatt-hours per year would be required for the additional and improved control devices.

We anticipate secondary air impacts from adding controls to meet the standards. The combustion of fuel needed to generate additional electricity would yield slight increases in nitrogen oxide (NO_X), carbon monoxide (CO), and sulfur dioxide (SO_2) emissions. Since NO_X and SO_2 emissions and electric generating units are covered by capped emissions trading programs, we do not estimate an increase in secondary air impacts for these pollutants for this rule form additional electricity demand.

The combustion of additional fuel from additional electrical usage and supplemental fuel for incineration devices would yield CO emissions of 1.3 tpy. The analyses are documented in the memorandum, *Secondary Impacts of MACT Level of Control for the Polyvinyl Chloride and Copolymer (PVC) Production Source Category*, and is available in the docket.

D. What are the economic impacts of the proposed standards?

We performed an economic impact analysis for PVC consumers and producers nationally, using the annual compliance costs estimated for this proposed rule. The impacts to producers affected by this proposed rule are annualized costs of less than 0.7 percent of their revenues, using the most current year available for revenue data. Prices and output for PVC should increase by no more than the impact on cost to revenues for producers; thus, PVC prices should increase by less than 0.7 percent. Hence, the overall economic impact of this proposed rule should be low on the affected industries and their consumers. For more information, please refer to the Economic Impact Analysis for this proposed rulemaking that is in the docket (EPA–HQ–OAR–2002–0037).

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it raises novel legal or policy issues. Accordingly, EPA submitted this action to OMB for review under Executive Order 12866 and Executive Order 13563 (76 FR 3821, January 21, 2011), and any changes made in response to OMB recommendations have been documented in the docket for this action.

In addition, EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is contained in *Cost and Impacts of the PVC and Copolymers Proposed Standard*, in Docket ID No. EPA–HQ–OAR–2002–0037. A copy of the analysis is available in the docket for this action and the analysis is briefly summarized in section V.B of this preamble.

B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to OMB under the *Paperwork Reduction Act*, 44 U.S.C. 3501, *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR No. 2432.01.

The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The proposed rule would require maintenance inspections of the control devices, and some notifications or reports beyond those required by the General Provisions. The recordkeeping requirements require only the specific information needed to determine compliance. The information collection activities in this ICR include the following: performance tests, wastewater sampling, resin sampling, LDAR monitoring, heat exchanger monitoring, PRD monitoring, operating parameter monitoring, preparation of a site-specific monitoring plan, monitoring and inspection, one-time and periodic reports, and the maintenance of records. Some information collection activities included in the NESHAP may occur within the first 3 years, and are presented in this burden estimate, but may not occur until 4 or 5 years following promulgation of the proposed standards for some affected sources. To be conservative in our estimate, the burden for these items is included in this ICR. An initial notification is required to notify the Designated Administrator of the applicability of this subpart, and to identify storage vessels, process vents, stripped resin, equipment leaks, wastewater, heat exchange systems, and other emission sources subject to this subpart. A notification of performance test must be submitted, and a site-specific test plan written for the performance test, along with a monitoring plan. Following the initial performance test, the owner or operator must submit a notification of compliance status that documents the performance test and the values for the operating parameters. A periodic report submitted every 6 months documents the values for the operating parameters and deviations; a notification of inspection of vessels and related inspection records; leaking and monitoring information for equipment leaks; and leaking and monitoring data for heat exchangers, if greater than leak definition. Owners or operators of PVC facilities are required to keep records of certain parameters and information for a period of 5 years. The annual testing, annual monitoring, reporting, and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the standards) is estimated to be $2.5 million. This includes 3,200 labor hours per year at a total labor cost of $0.3 million per year, and total non-labor capital costs of $3.3 million per year. This estimate includes initial and annual performance tests, conducting and documenting semiannual excess emission reports, maintenance inspections, developing a monitoring plan, notifications, and recordkeeping. Monitoring and testing cost were also included in the cost estimates presented in the control costs impacts estimates in section V of this preamble. The total burden for the Federal government (averaged over the first 3 years after the effective date of the standard) is estimated to be 1,098 hours per year, at a total labor cost of $50,482 per year. Burden is defined at 5 CFR 1320.3(b).

When a malfunction occurs, sources must report them according to the applicable reporting requirements of 40 CFR part 63, subpart HHHHHHH. An affirmative defense to civil penalties for exceedances of emission limits that are caused by malfunctions is available to a source if it can demonstrate that certain criteria and requirements are satisfied. The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 63.2 (*e.g.*, sudden, infrequent, not reasonably preventable and not caused by poor maintenance or careless operation) and where the source took necessary actions to minimize emissions. In addition, the source must meet certain notification and reporting requirements. For example, the source must prepare a written root cause analysis and submit a written report to the Administrator documenting that it has met the conditions and requirements for assertion of the affirmative defense. EPA considered whether there might be any burden associated with the notification, recordkeeping, and reporting requirements associated with the assertion of the affirmative defense. While recognizing that any such burdens are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense. The PVC industry is currently required to comply with the part 61 NESHAP requirement for releases from pressure relief valves and reactor manual vent valves, which does not allow a discharge into the atmosphere from these valves, except during an emergency. An emergency discharge means a "discharge which could not have been avoided by taking measures to prevent the discharge." The owners or operators must, within 10 days of any release from a pressure relief valve or a reactor manual vent valve, submit a report to the Administrator. The report must include the "nature and cause of discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss, the action that was taken to prevent the discharge, and measures adopted to prevent future discharges. The costs for these reports are already accounted for in the ICR burden estimate. Therefore, EPA estimates that there would be no additional costs for sources that choose to take advantage of the affirmative defense for malfunctions since it is already required for compliance with the rule. However, there may be other malfunctions that are not currently regulated under the part 61 NESHAP that might prompt a source to take advantage of an affirmative defense.

To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source (for those not already regulated under the part 61 NESHAP), EPA is including in the ICR the notification, recordkeeping, and reporting requirements associated with the assertion of the affirmative defense might entail. EPA's estimate for the required notification, reports, and records, including the root cause analysis, totals $3,141, and is based on the time and effort required of a source to review relevant data, interview plant employees, and document the events surrounding a malfunction that has caused an exceedance of an emission limit. The estimate also includes time to produce and retain the record and reports for submission to EPA. EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, EPA has established a public docket for this rule, which includes this ICR, under Docket ID number EPA–HQ–OAR–2002–0037. Submit any comments related to the ICR to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after May 20, 2011, a comment to OMB is best assured of having its full effect if OMB receives it by June 20, 2011. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act, or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this proposed rule on small entities, small entity is defined as: (1) A small business, as defined by the Small Business Administration's regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated, and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This proposed rule will not impose any requirements on small entities. To EPA's knowledge, there are no small entities subject to the proposed rule. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and Tribal governments, in the aggregate, or the private sector in any one year. The total annualized cost of this rule is estimated to be no more than $20 million (2010$) in any one year. Thus, this rule is not subject to the requirements of sections 202 or 205 of UMRA.

This rule is also not subject to the requirements of section 203 of UMRA, because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule only impacts PVC production facilities, and, thus, does not impact small governments uniquely or significantly.

E. Executive Order 13132: Federalism

The action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. The proposed rule imposes requirements on owners and operators of specified major and area sources, and not on State or local governments. There are no PVC production facilities owned or operated by State or local governments. Thus, Executive Order 13132 does not apply to this action.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed action from State and local officials.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have Tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). The proposed rule imposes requirements on owners and operators of specified area sources, and not Tribal governments. There are no PVC production facilities owned or operated by Indian Tribal governments. Thus, Executive Order 13175 does not apply to this action. EPA specifically solicits additional comment on this proposed action from Tribal officials.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045, because it is based solely on technology performance.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. EPA estimates that the requirements in this proposed action would cause most PVCPU to modify existing air pollution control devices (*e.g.*, increase the horsepower of their wet scrubbers) or install and operate new control devices, resulting in approximately 92,000 megawatt-hours per year of additional electricity being used.

Given the negligible change in energy consumption resulting from this proposed action, EPA does not expect any significant price increase for any energy type. The cost of energy distribution should not be affected by this proposed action at all since the action would not affect energy distribution facilities. We also expect that any impacts on the import of foreign energy supplies, or any other adverse outcomes that may occur with regards to energy supplies, would not be significant. We, therefore, conclude that if there were to be any adverse energy effects associated with this proposed action, they would be minimal.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104–113 (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable VCS.

This proposed rulemaking involves technical standards. EPA proposes to use ANSI/ASME PTC 19.10–1981, *Flue and Exhaust Gas Analyses*, as an acceptable alternative to EPA Method 3B. This standard is available from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016–5990.

No applicable VCS were identified for EPA Methods 1A, 2A, 2D, 2F, 2G, 21, 107, RCRA SW–846, PS–8, PS–9, and the TCEQ Modified El Paso Method.

During the search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to EPA's reference method, the EPA ordered a copy of the standard and reviewed it as a potential equivalent method. All potential standards were reviewed to determine the practicality of the VCS for this rule. This review requires significant method validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering, and policy equivalence to procedures in EPA reference methods. EPA may reconsider determinations of impracticality when additional information is available for particular VCS.

The search identified 17 other VCS that were potentially applicable for this rule in lieu of EPA reference methods. After reviewing the available standards, EPA determined that 17 candidate VCS (ASTM D3154–00 (2006), ASTM D3464–96 (2007), ASTM D3796–90 (2004), ISO 10780:1994, ASME B133.9–1994 (2001), ANSI/ASME PTC 19.10–1981 Part 10, ISO 10396:1993 (2007), ISO 12039:2001, ASTM D5835–95 (2007), ASTM D6522–00 (2005), CAN/CSA Z223.2–M86 (1999), NIOSH Method 2010, Amines, Aliphatic, ASTM D6060–96 (2001), EN 1948–3 (1996), EN 1911–1.2.3 (1998), ASTM D6735–01, ASTM D4855–97 (2002)) identified for measuring emissions of pollutants or their surrogates subject to emission standards in the rule would not be practical due to lack of equivalency, documentation, validation data and other important technical and policy considerations.

EPA welcomes comments on this aspect of the proposed rulemaking, and, specifically, invites the public to identify potentially applicable VCS, and to explain why such standards should be used in this regulation.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations, because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

An analysis of demographic data shows that the average percentage of minorities, percentages of the population below the poverty level, and the percentages of the population 17 years old and younger, in close proximity to the sources, are similar to the national averages, with percentage differences of 3, 1.8, and 1.7, respectively, at the 3-mile radius of concern. These differences in the absolute number of percentage points from the national average indicate a 9.4-percent, 14.4-percent, and 6.6-percent over-representation of minority populations, populations below the poverty level, and the percentages of the population 17 years old and younger, respectively.

In determining the aggregate demographic makeup of the communities near affected sources, EPA used census data at the block group level to identify demographics of the populations considered to be living near affected sources, such that they have notable exposures to current emissions from these sources. In this approach, EPA reviewed the distributions of different socio-demographic groups in the locations of the expected emission reductions from this rule. The review identified those census block groups with centroids within a circular distance of a 0.5, 3, and 5 miles of affected sources, and determined the demographic and socio-economic composition (e.g., race, income, education, etc.) of these census block groups. The radius of 3 miles (or approximately 5 kilometers) has been used in other demographic analyses focused on areas around potential sources.[7] [8] [9] [10] There was only one census block group with its centroids within 0.5 miles of any source affected by the proposed rule. EPA's demographic analysis has shown that these areas, in aggregate, have similar proportions of American Indians, African-Americans, Hispanics, and "Other and Multi-racial" populations to the national average. The analysis also showed that these areas, in aggregate, had similar proportions of families with incomes below the poverty level as the national average, and similar populations of children 17 years of age and younger.[11]

EPA defines Environmental Justice to include meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. To promote meaningful involvement, EPA has developed a communication and outreach strategy to ensure that interested communities have access to this proposed rule, are aware of its content, and have an opportunity to comment during the comment period. During the comment period, EPA will publicize the rulemaking via environmental justice newsletters, Tribal newsletters, environmental justice listservs, and the Internet, including the EPA Office of Policy Rulemaking Gateway Web site (*http://yosemite.epa.gov/opei/RuleGate.nsf/*). EPA will also conduct targeted outreach to environmental justice communities, as appropriate. Outreach activities may include providing general rulemaking fact sheets (*e.g.,* why is this important for my community) for environmental justice community groups, and conducting conference calls with interested communities. In addition, State and Federal permitting requirements will provide State and local governments, and members of affected communities the opportunity to provide comments on the permit conditions associated with permitting the sources affected by the proposed rule.

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: April 15, 2011.

Lisa P. Jackson,

Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations, is proposed to be amended as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart DDDDDD—[Amended]

2. Section 63.11140 is amended by revising paragraph (b)(2) and adding paragraph (e) to read as follows:

§ 63.11140 Am I subject to this subpart?

* * * * *

(b) * * *

(2) An affected source is a new source under this subpart if you commenced construction or reconstruction of the affected source on or after October 6, 2006 but prior to the effective date of publication of the final rule in the **Federal Register**. An affected source that commences construction or reconstruction on and after the effective date of publication of the final rule in the **Federal Register** is not subject to this subpart and is required to comply with subpart HHHHHHH of this part.

* * * * *

(e) Each affected source that commences construction or reconstruction on and after the effective date of publication of the final rule in the **Federal Register** is required to comply with subpart HHHHHHH of this part by the compliance dates specified in subpart HHHHHHH. On and after the compliance date specified in subpart HHHHHHH of this part that applies to your affected source, the requirements in § 63.11140(d) and §§ 63.11141 through 63.11145 of this subpart do not apply to the affected source.

3. Part 63 is amended by adding a new subpart HHHHHHH to read as follows:

Subpart HHHHHHH—National Emission Standards for Hazardous Air Pollutant Emissions for Polyvinyl Chloride and Copolymers Production

Sec.

What This Subpart Covers

Emission Limits, Operating Limits, and Work Practice Standards

General Compliance Requirements

Testing and Compliance Requirements

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[7] U.S. GAO (Government Accountability Office). *Demographics of People Living Near Waste Facilities.* Washington DC: Government Printing Office; 1995.

[8] Mohai P, Saha R. *Reassessing Racial and Socio-economic Disparities in Environmental Justice Research.* Demography. 2006;43(2): 383–399.

[9] Mennis J. *Using Geographic Information Systems to Create and Analyze Statistical Surfaces of Populations and Risk for Environmental Justice Analysis. Social Science Quarterly,* 2002;83(1):281–297.

[10] Bullard RD, Mohai P, Wright B, Saha R, *et al. Toxic Waste and Race at Twenty 1987–2007.* United Church of Christ. March, 2007.

[11] The results of the demographic analysis are presented in *Review of Environmental Justice Impacts: Polyvinyl Chloride,* September 2010, a copy of which is available in the docket.

Notifications, Reports, and Records

Definitions

Tables to Subpart HHHHHHH of Part 63

Subpart HHHHHHH—National Emission Standards for Hazardous Air Pollutant Emissions for Polyvinyl Chloride and Copolymers Production

What This Subpart Covers

§ 63.11860 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants emitted from the production of polyvinyl chloride and copolymers. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission standards.

§ 63.11865 Am I subject to the requirements in this subpart?

You are subject to this subpart if you own or operate a polyvinyl chloride and copolymers process unit (PVCPU) as defined in § 63.12005 that is located at, or is part of, a major source or an area source as defined in § 63.2. Your PVCPU is not subject to this subpart if it is a research and development facility, as defined in section 112(c)(7) of the Clean Air Act.

§ 63.11870 What is the affected source of this subpart?

(a) The affected source for this subpart is each individual PVCPU.

(b) An existing affected source is one for which construction was commenced before May 20, 2011 at a major or area source.

(c) A new affected source is one for which construction is commenced on or after May 20, 2011 at a major or area source.

(d) If components of an existing affected source are replaced such that the replacement meets the definition of reconstruction in § 63.2 and the reconstruction commenced on or after May 20, 2011, then the existing affected source becomes a reconstructed source and is subject to the relevant standards for a new affected source. The reconstructed source must comply with the requirements for a new affected source upon initial startup of the reconstructed source or by the effective date of publication of the final rule in the **Federal Register**, whichever is later.

§ 63.11871 What is the relationship to 40 CFR part 61, subpart F?

After the applicable compliance date specified in § 63.11875(a), (b), or (c), an affected source that is also subject to the provisions of 40 CFR part 61, subpart F, is required to comply with the provisions of this subpart and not 40 CFR part 61, subpart F.

§ 63.11875 When must I comply with this subpart?

(a) If you own or operate an existing affected source, you must achieve compliance with the applicable provisions in this subpart no later than 3 years after the effective date of publication of the final rule in the **Federal Register**. On or after the date 3 years after the effective date of publication of the final rule in the **Federal Register**, any such existing affected source is no longer subject to the provisions of 40 CFR part 61, subpart F.

(b) If you start up a new affected source on or before the effective date of publication of the final rule in the **Federal Register**, you must achieve compliance with the provisions of this subpart no later than the effective date of publication of the final rule in the **Federal Register**. On or after the effective date of publication of the final rule in the **Federal Register**, any such new affected source is not subject to the provisions of 40 CFR part 61, subpart F.

(c) If you start up a new affected source after the effective date of publication of the final rule in the **Federal Register**, you must achieve compliance with the provisions of this subpart upon startup of your affected source. Upon startup, any such new affected source is not subject to the provisions of 40 CFR part 61, subpart F.

(d) You must meet the notification requirements in §§ 63.9 and 63.11985 according to the dates specified in those sections. Some of the notifications must be submitted before you are required to comply with the emission limits and standards in this subpart.

Emission Limits, Operating Limits, and Work Practice Standards

§ 63.11880 What emission limits, operating limits, and standards must I meet?

(a) You must comply with each emission limit and standard specified in Tables 1, 3, and 4 to this subpart that applies to your existing affected source, and you must comply with each emission limit and standard specified in Tables 2, 3, and 4 to this subpart that applies to your new affected source.

(b) You must establish an operating limit for each operating parameter required to be monitored in §§ 63.11925, 63.11960, 63.11970, and 63.11975. As specified in those sections, you must establish each operating limit as an operating range, minimum operating level, or maximum operating level. You must comply with each established operating limit.

(c) You must comply with the emission limits and standards specified in §§ 63.11910 through 63.11980 that apply to your affected source.

General Compliance Requirements

§ 63.11885 What parts of the General Provisions apply to me?

Table 5 to this subpart specifies which parts of the General Provisions in subpart A of this part apply to you.

§ 63.11890 What are my additional general requirements for complying with this subpart?

(a) The emission limits, operating limits, and work practice standards specified in this subpart apply at all times, including periods of SSM.

(b) At all times, you must operate and maintain your affected source, including associated air pollution control components and monitoring system components, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(c) You must install, calibrate, maintain, and operate all monitoring system components according to § 63.8, § 63.11935(b) and (c), and paragraphs (c)(1) and (2) of this section.

(1) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the continuous monitoring system at all times the affected source is operating. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

(2) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other required data collection periods in assessing the operation of the control device and associated control system. You must report any periods for which the monitoring system failed to collect required data.

(d) A deviation means any of the cases listed in paragraphs (d)(1) through (7) of this section.

(1) Any instance in which an affected source subject to this subpart, or an owner or operator of such a source, fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emission limit, operating limit, or work practice standard.

(2) When a performance test indicates that emissions of a pollutant in Table 1, 2, or 3 to this subpart are exceeding the emission standard for the pollutant specified in Table 1, 2, or 3 to this subpart.

(3) When a 3-hour block average from a continuous emissions monitor, as required by § 63.11925(c), exceeds an emission limit in Table 1 or 2 to this subpart.

(4) When the average value of a monitored operating parameter, based on the data averaging period for compliance specified in Table 6 to this subpart, does not meet the operating limit established in § 63.11880(b).

(5) When an affected source discharges to the atmosphere from any of the sources specified in paragraphs (d)(5)(i) through (iv) of this section.

(i) A pressure relief device, as defined in § 63.12005.

(ii) A bypass, as defined in § 63.12005.

(iii) A closed vent system in vacuum service.

(iv) A closure device on a pressure vessel.

(6) Any instance in which the affected source subject to this subpart, or an owner or operator of such a source, fails to meet any term or condition specified in paragraph (d)(6)(i) or (ii) of this section.

(i) Any term or condition that is adopted to implement an applicable requirement in this subpart.

(ii) Any term or condition that is included in the operating permit for any affected source required to obtain such a permit.

(7) Any failure to collect required data, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

§ 63.11895 How do I establish an affirmative defense for exceedance of an emission limit during malfunction?

In response to an action to enforce the standards set forth in § 63.11880, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined in § 63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring system devices, process components, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount, and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control device components or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation, if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis must also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction must notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than 2 working days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense must also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 63.11880 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45-day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

§ 63.11896 What am I required to do if I make a process change to a PVCPU at my affected source?

If you make a process change to an existing affected source that does not meet the criteria to become a new affected source in § 63.11870(c), you must comply with the requirements in paragraph (a) of this section. If you make a process change to a new affected source, you must comply with the requirements in paragraph (b) of this section. If you must comply with the provisions of paragraph (a) or (b) of this section, you must also meet the testing and reporting requirements in paragraphs (c) and (d) of this section. Refer to § 63.12005 for the definition of process changes.

(a) If you replace any components of an existing affected source or make a process change to an existing affected source resulting in a change to the characteristics of any emission point, such that a different emission limit, operating parameter limit, or work practice requirement applies, and the criteria to become a new affected source in § 63.11870(c) are not met, you must demonstrate that the changed or added emission point is in compliance with the applicable requirements for an existing affected source. You must demonstrate initial compliance with the emission limits and establish any applicable operating limits in § 63.11880 within 180 days of the date of start-up of the changed process unit. You must demonstrate compliance with any applicable work practice standards upon startup of the changed process unit.

(b) If you replace any components of a new affected source, or make a process change to a new affected source resulting in a change to the characteristics of any emission point, such that a different emission limit, operating parameter limit, or work practice requirement applies, you must demonstrate that all changed emission points are in compliance with the applicable requirements for a new affected source. You must demonstrate initial compliance with the emission limits and establish any applicable operating limits in § 63.11880 within 180 days of the date of startup of the changed process unit. You must demonstrate compliance with any applicable work practice standards upon startup of the changed process unit.

(c) For process changes, you must demonstrate continuous compliance with your emission limits and standards, operating limits, and work practice standards according to the procedures and frequency in §§ 63.11910 through 63.11980.

(d) For process changes, you must submit the report specified in § 63.11985(b)(4)(iii).

Testing and Compliance Requirements

§ 63.11900 By what date must I conduct initial performance testing and monitoring, establish any applicable operating limits, and demonstrate initial compliance with my emission limits and work practice standards?

(a) For existing affected sources, you must establish any applicable operating limits required in § 63.11880 and demonstrate initial compliance with the emission limits and standards specified in Tables 1, 3, and 4 to this subpart, as applicable, no later than 180 days after the compliance date specified in § 63.11875 and according to the applicable provisions in § 63.7(a)(2).

(b) For existing affected sources, you must demonstrate initial compliance with any applicable work practice standards required in § 63.11880 no later than the compliance date specified in § 63.11875 and according to the applicable provisions in § 63.7(a)(2).

(c) For new or reconstructed affected sources, you must establish any applicable operating limits required in § 63.11880, and demonstrate initial compliance with the emission limits and standards specified in Tables 2, 3, and 4 to this subpart, as applicable, no later than 180 days after the effective date of publication of the final rule in the **Federal Register** or within 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) For new and reconstructed affected sources, you must demonstrate initial compliance with any applicable work practice standards required in § 63.11880 no later than the startup date of the affected source or the effective date of publication of the final rule in the **Federal Register**, whichever is later, and according to the applicable provisions in § 63.7(a)(2).

(e) If you demonstrate initial compliance using a performance test and a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure, then you must follow the procedures in § 63.7(a)(4).

§ 63.11905 When must I conduct subsequent performance testing and monitoring to demonstrate continuous compliance?

Following the date of your initial demonstration of compliance in § 63.11900, you must conduct subsequent performance testing and monitoring to demonstrate continuous compliance with your emission limits, operating limits, and work practice standards according to the procedures and frequency in §§ 63.11910 through 63.11980. If you make a process change as specified in § 63.11896, such that a different emission limit or operating parameter limit applies, you must conduct a performance test according to § 63.11896.

§ 63.11910 What are my initial and continuous compliance requirements for storage vessels?

You must comply with the requirements specified in Table 4 to this subpart for each storage vessel.

(a) For each fixed roof storage vessel used to comply with the requirements specified in Table 4 to this subpart, you must meet the requirements in paragraphs (a)(1) through (4) of this section. If you elect to use a fixed roof storage vessel vented to a closed vent system and control device, the closed vent system and control device must meet the requirements in §§ 63.11925 through 63.11950.

(1) *Design requirements.* (i) The fixed roof must be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(ii) Each opening in the fixed roof must be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device.

(2) *Operating requirements.* (i) Except as specified in paragraph (a)(2)(ii) of this section, the fixed roof must be installed with each closure device secured in the closed position.

(ii) Opening of closure devices or removal of the fixed roof is allowed under conditions specified in paragraphs (a)(2)(ii)(A) and (B) of this section.

(A) A closure device may be opened or the roof may be removed when needed to provide access.

(B) A conservation vent that vents to the atmosphere is allowed during normal operations to maintain the tank internal operating pressure within tank design specifications. Normal operating conditions that may require these devices to open are during those times when the internal pressure of the storage vessel is outside the internal pressure operating range for the storage vessel as a result of loading or unloading operations or diurnal ambient temperature fluctuations.

(3) *Inspection and monitoring requirements.* (i) Visually inspect the fixed roof and its closure devices for defects initially and at least once per calendar year except as specified in paragraph (a)(3)(ii) of this section. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the wall of the storage vessel; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The inspection requirement specified in paragraph (a)(3)(i) of this section does not apply to parts of the fixed roof that you determine are unsafe to inspect because operating personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (a)(3)(i) of this section, provided you comply with the requirements specified in paragraphs (a)(3)(ii)(A) and (B) of this section.

(A) You prepare and maintain at the plant site written documentation that identifies all parts of the fixed roof that are unsafe to inspect and explains why such parts are unsafe to inspect.

(B) You develop and implement a written plan and schedule to conduct inspections the next time alternative storage capacity becomes available and the storage vessel can be emptied or temporarily removed from service, as necessary, to complete the inspection. The required inspections must be performed as frequently as practicable but do not need to be performed more than once per calendar year. You must maintain a copy of the written plan and schedule at the plant site.

(4) *Repair requirements.* (i) Make first efforts to repair a defect no later than 5 days after detection, and complete repair as soon as possible, but no later than 45 days after detection. You must comply with the requirements in this paragraph (a)(4)(i) except as provided in paragraph (a)(4)(ii) of this section.

(ii) Repair of a defect may be delayed beyond 45 days if you determine that repair of the defect requires emptying or temporary removal from service of the storage vessel and no alternative storage capacity is available at the site to accept the removed material. In this case, repair the defect the next time alternative storage capacity becomes available and the storage vessel can be emptied or temporarily removed from service.

(b) If you elect to use an internal floating roof storage vessel or external floating roof storage vessel to comply with the requirements specified in Table 4 to this subpart, you must meet all requirements of §§ 63.1060 through 63.1067 of subpart WW of this part for internal floating roof storage vessels or external floating roof storage vessels, as applicable.

(c) For each pressure vessel used to comply with the requirements specified in Table 4 to this subpart, you must meet the requirements in paragraphs (c)(1) through (4) of this section.

(1) Whenever the pressure vessel is in hazardous air pollutants (HAP) service, you must operate the pressure vessel as a closed system that does not vent to the atmosphere, e.g., during filling, emptying, and purging. The vent stream during filling, emptying, and purging must meet the process vent emission limits in Table 1 or 2 to this subpart, as applicable, by routing to a closed vent system and control device that is designed and operated in accordance with §§ 63.11925 through 63.11950.

(2) Each opening in the pressure vessel must be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device.

(3) All potential leak interfaces must be monitored annually for leaks using the procedures specified in § 63.11915. You must comply with the recordkeeping provisions specified in § 63.11990(b) and the reporting provisions specified in § 63.11985(a)(1), (b)(1), and (c)(8). For any leak detected, you must submit the report specified in paragraph (c)(4) of this section.

(4) Pressure vessel closure devices must not discharge to the atmosphere. Any such release (*e.g.*, leak) constitutes a violation of this rule. Within 10 days of any such release, you must submit to the Administrator the report specified in § 63.11985(c)(8). This report is required even if you elect to follow the procedures specified in § 63.11895 to establish an affirmative defense.

§ 63.11915 What are my compliance requirements for equipment leaks?

For equipment (as defined in § 63.12005) in HAP service, you must comply with the requirements in paragraphs (a) through (c) of this section.

(a) *Requirement for certain equipment in subpart UU of this part.* You must comply with §§ 63.1020 through 63.1025, § 63.1027, and §§ 63.1029 through 63.1039 of subpart UU of this part.

(b) *Requirements for pumps, compressors, and agitator seals.* You must meet the requirements specified for each type of equipment in paragraphs (b)(1) through (5) of this section. For each type of equipment specified in paragraphs (b)(1) through (5) of this section, you must also meet the requirements of paragraph (a) of this section.

(1) *Rotating pumps.* HAP emissions from seals on all rotating pumps in HAP service are to be minimized by installing sealless pumps, pumps with double mechanical seals or equivalent equipment, or procedures approved by the Administrator. If double mechanical seals are used, HAP emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any HAP between the two seals through a control system from which the concentration of HAP in the exhaust gases does not exceed 10 parts per million; or

equivalent equipment or procedures approved by the Administrator.

(2) *Reciprocating pumps.* HAP emissions from seals on all reciprocating pumps in HAP service are to be minimized by installing double outboard seals, or equivalent equipment or procedures approved by the Administrator. If double outboard seals are used, HAP emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any HAP between the two seals through a control system from which the concentration of HAP in the exhaust gases does not exceed 10 ppm; or equivalent equipment or procedures approved by the Administrator.

(3) *Rotating compressors.* HAP emissions from seals on all rotating compressors in HAP service are to be minimized by installing compressors with double mechanical seals, or equivalent equipment, or procedures approved by the Administrator. If double mechanical seals are used, HAP emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any HAP between the two seals through a control system from which the concentration of HAP in the exhaust gases does not exceed 10 ppm; or equivalent equipment or procedures approved by the Administrator.

(4) *Reciprocating compressors.* HAP emissions from seals on all reciprocating compressors in HAP service are to be minimized by installing double outboard seals, or equivalent equipment, or procedures approved by the Administrator. If double outboard seals are used, HAP emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any HAP between the two seals through a control system from which concentration of HAP in the exhaust gases does not exceed 10 ppm; or equivalent equipment or procedures approved by the Administrator.

(5) *Agitators.* HAP emissions from seals on all agitators in HAP service are to be minimized by installing agitators with double mechanical seals, or equivalent equipment, or procedures approved by the Administrator. If double mechanical seals are used, HAP emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the agitated vessel; by ducting any HAP between the two seals through a control system from which the concentration of HAP in the exhaust gases does not exceed 10 ppm; or equivalent equipment or procedures approved by the Administrator.

(c) *Requirements for pressure relief devices.* For pressure relief devices, you must meet the requirements of this paragraph (c) and paragraph (a) of this section. Any release to the atmosphere from a pressure relief device in HAP service, as defined in § 63.12005, constitutes a violation of this rule. You must install, maintain, and operate release indicators as specified in paragraphs (c)(1) and (2) of this section unless the pressure relief device meets the process vent emission limits in Table 1 or 2 to this subpart by routing to a closed vent system and control device designed and operated in accordance with the requirements in §§ 63.11925 through 63.11950. For any pressure relief devices, you must comply with the recordkeeping provisions in § 63.11990(c) and reporting provisions in §§ 63.11985(a)(2), (b)(2), and (c)(8). For any release, you must submit the report specified in § 63.11985(c)(8), as described in paragraph (c)(3) of this section.

(1) A release indicator must be properly installed on each pressure relief device in such a way that it will indicate when an emission release has occurred.

(2) Each indicator must be equipped with an alert system that will notify an operator immediately and automatically when the pressure relief device is open. The alert must be located such that the signal is detected and recognized easily by an operator.

(3) For any instance that the release indicator indicates that a pressure relief device is open, you must notify operators that a pressure release has occurred, and, within 10 days of the release, you must submit to the Administrator the report specified in § 63.11985(c)(8). This report is required even if you elect to follow the procedures specified in § 63.11895(b) to establish an affirmative defense.

§ 63.11920 What are my initial and continuous compliance requirements for heat exchange systems?

(a) Except as provided in paragraph (b) of this section, you must perform monitoring to identify leaks of total strippable volatile organic compounds from each heat exchange system subject to the requirements of this subpart according to the procedures in paragraphs (a)(1) through (4) of this section.

(1) *Monitoring locations for closed-loop recirculation heat exchange systems.* You must collect and analyze a sample from the location(s) described in either paragraph (a)(1)(i) or (ii) of this section.

(i) Each cooling tower return line prior to exposure to air for each heat exchange system.

(ii) Selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).

(2) *Monitoring locations for once-through heat exchange systems.* You must collect and analyze a sample from the location(s) described in paragraph (a)(2)(i) of this section. You may also elect to collect and analyze an additional sample from the location(s) described in paragraph (a)(2)(ii) of this section.

(i) Selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).

(ii) The inlet water feed line for a once-through heat exchange system prior to any heat exchanger. If multiple heat exchange systems use the same water feed (*i.e.,* inlet water from the same primary water source), you may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems that use that same water feed.

(3) *Monitoring method.* Determine the total strippable volatile organic compounds concentration at each monitoring location using the analytical method specified in either paragraph (a)(3)(i) or (ii) of this section.

(i) Determine the total strippable volatile organic compounds concentration (in parts per million by volume) as methane from the air stripping testing system using "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference, see § 63.14) using a flame ionization detector analyzer.

(ii) Determine the total strippable volatile organic compounds concentration (in parts per billion by weight) in the cooling water using Method 8021B, "Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors," dated December 1996 (incorporated by reference, see § 63.14). The target list of compounds shall be generated based on a pre-survey sample and analysis by gas chromatography/mass spectrometry and process knowledge to include all compounds that can potentially leak into the cooling water. If Method 8021B, “Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors,” dated December 1996 (incorporated by reference, see § 63.14) is not applicable for all compounds that can potentially leak into the cooling water for a given heat exchange system, you cannot use this monitoring method for that heat exchange system.

(4) *Monitoring frequency.* Determine the total strippable volatile organic compounds concentration at each monitoring location at the frequencies specified in paragraphs (a)(4)(i) through (iii) of this section.

(i) For heat exchange systems for which you have not delayed repair of any leaks, monitor at the frequencies specified in paragraphs (a)(4)(i)(A) and (B) of this section.

(A) For heat exchange systems at an existing affected source, monitor at least monthly. You may elect to monitor more frequently than the minimum frequency specified in this paragraph (a)(4)(i)(A).

(B) For heat exchange systems at a new affected source, monitor at least once every 12 hours. You may elect to monitor more frequently than the minimum frequency specified in this paragraph (a)(4)(i)(B).

(ii) For heat exchange systems for which you have delayed repair, as provided in paragraph (f) of this section, monitor at least monthly. You may elect to monitor more frequently than the minimum frequency specified in this paragraph (a)(4)(ii).

(iii) If you elected to monitor the inlet water feed line for a once-through heat exchange system, as provided in paragraph (a)(2)(ii) of this section, you must monitor the inlet water feed line at the same frequency used to monitor the heat exchange exit line(s), as required in paragraph (a)(2)(i) of this section.

(b) A heat exchange system is exempt from the monitoring requirements in paragraph (a) of this section if it meets the criteria in either paragraph (b)(1) or (2) of this section.

(1) All heat exchangers within the heat exchange system operate with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.

(2) The heat exchange system does not contain any heat exchangers.

(c) The leak action level is specified in paragraphs (c)(1) and (2) of this section.

(1) For a heat exchange system at an existing affected source, the leak action level is a total strippable volatile organic compounds concentration (as methane) in the stripping gas of 2.9 parts per million by volume or a total strippable volatile organic compounds concentration in the cooling water of 38 parts per billion by weight.

(2) For a heat exchange system at a new affected source, the leak action level is a total strippable volatile organic compounds concentration (as methane) in the stripping gas of 2.3 parts per million by volume or a total strippable volatile organic compounds concentration in the cooling water of 30 parts per billion by weight.

(d) A leak is defined as specified in paragraph (d)(1) or (2) of this section, as applicable.

(1) For once-through heat exchange systems for which you monitor the inlet water feed, as described in paragraph (a)(2)(ii) of this section, a leak is detected if the difference in the measurement value of the sample taken from a location specified in paragraph (a)(2)(i) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (a)(2)(ii) of this section equals or exceeds the leak action level.

(2) For all other heat exchange systems, a leak is detected if a measurement value taken according to the requirements in paragraph (a) of this section equals or exceeds the leak action level.

(e) If a leak is detected, you must repair the leak to reduce the measured concentration to below the applicable action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraphs (f) and (g) of this section. Repair includes re-monitoring as specified in paragraph (a) of this section to verify that the measured concentration is below the applicable action level. Actions that you can take to achieve repair include but are not limited to any action specified in paragraphs (e)(1) through (5) of this section.

(1) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube.

(2) Blocking the leaking tube within the heat exchanger.

(3) Changing the pressure so that water flows into the process fluid.

(4) Replacing the heat exchanger or heat exchanger bundle.

(5) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.

(f) If you detect a leak when monitoring a cooling tower return line or heat exchanger exit line under paragraph (a) of this section, you may conduct additional monitoring following the requirements in paragraph (a) of this section to further isolate each heat exchanger or group of heat exchangers in regulated material service within the heat exchange system for which the leak was detected. If you do not detect any leaks when conducting additional monitoring for each heat exchanger or group of heat exchangers, the heat exchange system is excluded from repair requirements in paragraph (d) of this section.

(g) The delay of repair action level is defined as either a total strippable volatile organic compounds concentration (as methane) in the stripping gas of 29 parts per million by volume or a total strippable volatile organic compounds concentration in the cooling water of 380 parts per billion by weight. You may delay the repair of a leaking heat exchanger when one of the conditions in paragraphs (g)(1) or (2) of this section is met. You must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.

(1) If the repair is technically infeasible without a shutdown and the total strippable volatile organic compounds concentration is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, you may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monitoring, the total strippable volatile organic compounds concentration is equal to or greater than the delay of repair action level, you must repair the leak within 30 days of the monitoring event in which the total strippable volatile organic compounds was equal to or exceeded the delay of repair action level.

(2) If the necessary equipment, parts, or personnel are not available and the total strippable volatile organic compounds concentration (as methane) is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, you may delay the repair for a maximum of 120 days from the day the leak was first identified. You must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monthly monitoring, the total strippable volatile organic compounds concentration is

equal to or greater than the delay of repair action level, you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the total strippable volatile organic compounds delay of repair action level.

(h) To delay the repair under paragraph (g) of this section, you must record the information in paragraphs (h)(1) through (h)(4) of this section.

(1) The reason(s) for delaying repair.

(2) A schedule for completing the repair as soon as practical.

(3) The date and concentration of the leak as first identified and the results of all subsequent monitoring events during the delay of repair.

(4) An estimate of the potential emissions from the leaking heat exchange system following the procedures in paragraphs (g)(4)(i) and (g)(4)(ii) of this section.

(i) Determine the total strippable volatile organic compounds concentration in the cooling water, in parts per billion by weight. If the Modified El Paso Method is used, calculate the total strippable volatile organic compounds concentration in the cooling water using equation 7–1 from "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference, see § 63.14) and the total strippable volatile organic compounds concentration measured in the stripped air.

(ii) Calculate the emissions for the leaking heat exchange system by multiplying the volatile organic compounds concentration in the cooling water, parts per billion by weight, by the flow rate of the cooling water at the selected monitoring location and by the expected duration of the delay. The flow rate may be based on direct measurement, pump curves, heat balance calculations, or other engineering methods.

§ 63.11925 What are my initial and continuous compliance requirements for process vents?

Each process vent must meet the requirements of paragraphs (a) through (f) of this section.

(a) *Emission limits.* Each process vent stream must meet the emission limits in Table 1 or 2 to this subpart prior to the vent stream being exposed to the atmosphere. The emission limits in Table 1 or 2 to this subpart apply at all times.

(b) *Closed vent systems and control devices.* Each control device used to comply with paragraph (a) of this section must meet the requirements of §§ 63.11925 and 63.11940, and all process vent streams treated by the control device must be routed through a closed vent system meeting the requirements in § 63.11930. You must not use a flare to comply with the emission limits in Table 1 or 2 to this subpart.

(c) *General monitoring requirements.* Except as provided in paragraphs (c)(1) through (3) of this section, for each control device used to comply with the process vent emission limit specified in Table 1 or 2 to this subpart, you must install and operate a continuous parameter monitoring systemsCPMS to monitor each operating parameter specified in § 63.11940(a) through (i) to comply with your operating limit(s) required in § 63.11880(b)

(1) *Hydrogen chloride continuous emission monitoring system (CEMS).* According to the schedule specified in paragraphs (c)(1)(i) through (iii) of this section, respectively, new affected sources must comply with paragraph (c)(1)(i) of this section, and existing affected sources must comply with paragraph (c)(1)(ii) of this section, in lieu of establishing operating limits in § 63.11880(b) and using CPMS to comply with the operating limits, as specified in § 63.11940(a) through (i).

(i) New affected sources, beginning no more than 6-months after the date of promulgation of a performance specification for hydrogen chloride CEMS, must install and operate a hydrogen chloride CEMS to demonstrate initial and continuous compliance with the hydrogen chloride emission limit for process vents, as specified in paragraphs (d)(2) through (4) and (e) of this section.

(ii) Existing affected sources, upon promulgation of a performance specification for hydrogen chloride CEMS, have the option to install a hydrogen chloride CEMS to demonstrate initial and continuous compliance with the hydrogen chloride emission limit for process vents, as specified in paragraphs (d) and (e) of this section.

(2) *Dioxin/furan CEMS.* According to the schedule specified in paragraphs (c)(2)(i) through (iii) of this section, respectively, new affected sources must comply with paragraph (c)(2)(i) of this section, and existing affected sources must comply with paragraph (c)(1)(ii) of this section, in lieu of establishing operating limits in § 63.11880(b) and using CPMS to comply with the operating limits as specified in § 63.11940(a) through (i):

(i) New affected sources, beginning no more than 6 months after the date of promulgation of a performance specification for dioxin/furan CEMS, must install and operate a dioxin/furan CEMS to demonstrate initial and continuous compliance with the dioxin/furan emission limit for process vents, as specified in paragraphs (d)(2) through (4) and (e) of this section.

(ii) Existing sources, upon promulgation of a performance specification for dioxin/furan CEMS, have the option to install a dioxin/furan CEMS to demonstrate initial and continuous compliance with the dioxins/furan emission limit for process vents, as specified in paragraphs (d)(2) through (4) and (e) of this section.

(3) *Total hydrocarbon CEMS.* In lieu of establishing operating limits in § 63.11880(b) and using CPMS to comply with the operating limits as specified in § 63.11940(a) through (i), new and existing affected sources have the option to install a total hydrocarbon CEMS to demonstrate initial and continuous compliance with the total organic HAP emission limit for process vents, as specified in paragraphs (d)(2) through (4) and (e) of this section.

(d) *Initial compliance.* To demonstrate initial compliance with the process vent emission limits in Table 1 or 2 to this subpart, you must comply with paragraphs (d)(1) through (5) of this section.

(1) You must conduct an initial inspection as specified in § 63.11930(d) for each closed vent system.

(2) For each CEMS and CPMS required or that you elect to use as specified in paragraph (c) of this section, you must prepare the quality control program and site-specific performance evaluation test plan specified in § 63.11935(b) and site-specific monitoring plan specified in § 63.11935(c), respectively.

(3) For each CEMS and CPMS specified in paragraph (d)(2) of this section, you must install, operate, and maintain the CEMS and CPMS as specified in §§ 63.11935(b) and (c), respectively, and you must conduct an initial site-specific performance evaluation test according to your site-specific monitoring plan and §§ 63.11935(b)(3) and (c)(4), respectively.

(4) For each emission limit for which you use a CEMS to demonstrate compliance, you must demonstrate initial compliance with the emission limits in Table 1 or 2 to this subpart based on 3-hour block averages of CEMS data collected at the minimum

frequency specified in §§ 63.11935(b)(2) and 63.11890(c), and calculated using the data reduction method specified in § 63.11935(e). For a CEMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the 3-hour averaging period.

(5) For each emission limit for which you do not use a CEMS to demonstrate compliance, you must meet the requirements of paragraphs (d)(5)(i) through (iii) of this section.

(i) You must conduct an initial performance test according to the requirements in § 63.11945 to demonstrate compliance with the total organic HAP, vinyl chloride, hydrogen chloride, or dioxin/furan emission limit in Table 1 or 2 to this subpart.

(ii) During the performance test specified in paragraph (d)(5)(i) of this section, for each CPMS installed and operated as specified in paragraph (d)(2) of this section, you must establish an operating limit as the operating parameter range, minimum operating parameter level, or maximum operating parameter level specified in § 63.11935(d). Each operating limit must be based on the data averaging period for compliance specified in Table 6 to this subpart using data collected at the minimum frequency specified in §§ 63.11935(c)(2) and 63.11890(c), and calculated using the data reduction method specified in § 63.11935(e). For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging period specified in Table 6 to this subpart.

(e) *Continuous compliance.* To demonstrate continuous compliance with the emission limits in Table 1 or 2 to this subpart for each process vent, you must comply with paragraphs (e)(1) through (5) of this section.

(1) You must meet the requirements in § 63.11930 for each closed vent system.

(2) You must operate and maintain each CEMS and CPMS required in paragraph (c) of this section as specified in § 63.11935(b) and (c), respectively.

(3) For each emission limit for which you use a CEMS to demonstrate compliance, you must meet the requirements in paragraphs (e)(3)(i) and (ii) of this section.

(i) You must conduct a periodic site-specific CEMS performance evaluation test according to your quality control program and site-specific performance evaluation test plan specified in § 63.11935(b)(1).

(ii) You must demonstrate continuous compliance with the emission limits in Table 1 or 2 to this subpart based on 3-hour block averages of CEMS data, the minimum data collection frequency specified in §§ 63.11935(b)(2) and 63.11890(c), and the data reduction method specified in § 63.11935(e). For a CEMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the 3-hour averaging period.

(4) For each emission limit for which you do not use a CEMS to demonstrate compliance, you must meet the requirements of paragraphs (e)(4)(i) and (ii) of this section.

(i) Except for hydrogen chloride, you must conduct an annual performance test according to the requirements in § 63.11945 for each pollutant in Table 1 or 2 to this subpart.

(ii) For each CPMS operated and maintained as specified in paragraph (e)(2) of this section, you must meet the requirements specified in paragraphs (e)(4)(ii)(A) through (C) of this section.

(A) You must conduct periodic site-specific CPMS performance evaluation tests according to your site-specific monitoring plan and § 63.11935(c).

(B) For each control device being monitored, you must continuously collect CPMS data consistent with § 63.11890(c) and your site-specific monitoring plan. You must continuously determine the average value of each monitored operating parameter based on the data collection and reduction methods specified in §§ 63.11935(c)(2) and 63.11935(e), and the applicable data averaging period for compliance specified in Table 6 to this subpart for all periods the process is operating. For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging periods specified in Table 6 to this subpart.

(C) You must demonstrate continuous compliance with each operating limit established in paragraph (d)(4)(iii) of this section using these average values calculated in paragraph (e)(4)(ii)(B) of this section.(5) Each closed vent systems and control device used to comply with an emission limit in Table 1 or 2 to this subpart must be operated at all times when emissions are vented to, or collected by, these systems or devices.

(f) To demonstrate compliance with the dioxin/furan toxic equivalency emission limit specified in Table 1 or 2 to this subpart, you must determine dioxin/furan toxic equivalency as specified in paragraphs (f)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra-through octachlorinated-congener emitted using Method 23 at 40 CFR part 60, appendix A–7.

(2) For each dioxin/furan (tetra-through octachlorinated) congener measured in accordance with paragraph (f)(1) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 7 to this subpart.

(3) Sum the products calculated in accordance with paragraph (f)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

§ 63.11930 What requirements must I meet for closed vent systems?

(a) *General.* To route emissions from process vents subject to the HAP emission limits in Table 1 or 2 to this subpart to a control device, you must use a closed vent system and meet the requirements of this section and all provisions referenced in this section. However, if you operate and maintain your closed vent system in vacuum service as defined in § 63.12005, you must meet the requirements in paragraph (h) of this section and are not required to meet the requirements in paragraphs (a) through (g) of this section.

(b) *Collection of emissions.* Each closed vent system must be designed and operated to collect the HAP vapors from the process vent, and to route the collected vapors to a control device.

(c) *Bypass.* For each closed vent system that contains a bypass as defined in § 63.12005 (*e.g.,* diverting a vent stream away from the control device or causing air intrusion into the control device), you must not discharge to the atmosphere through the bypass. Any such release constitutes a violation of this rule. The use of any bypass diverted to the atmosphere during a performance test invalidates the performance test. You must comply with the provisions of either paragraph (c)(1) or (2) of this section for each closed vent system that contains a bypass that could divert a vent stream to the atmosphere.

(1) *Bypass flow indicator.* Install, maintain, and operate a flow indicator as specified in paragraphs (c)(1)(i) through (iv) of this section.

(i) The flow indicator must be properly installed at the entrance to any bypass.

(ii) The flow indicator must be equipped with an alarm system that will alert an operator immediately, and automatically when flow is detected in the bypass. The alarm must be located such that the alert is detected and recognized easily by an operator.

(iii) If the alarm is triggered, you must immediately initiate procedures to identify the cause of the alarm. If any closed vent system has discharged to the atmosphere through a vent or bypass, you must initiate procedures to stop the bypass discharge.

(iv) For any instances where the flow indicator alarm is triggered, you must submit to the Administrator within 10 days of the discharge the report specified in § 63.11985(c)(8). This report is required even if you elect to follow the procedures specified in § 63.11895 to establish an affirmative defense and submit the reports specified in § 63.11985(c)(4).

(2) *Bypass valve configuration.* Secure the bypass valve in the non-diverting position with a car-seal or a lock-and-key type configuration.

(i) You must visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position, and the vent stream is not diverted through the bypass. A broken seal or closure mechanism or a diverted valve constitutes a violation from the emission limits in Table 1 or 2 to this subpart. You must maintain the records specified in paragraph (g)(1)(ii) of this section.

(ii) For each seal or closure mechanism, you must comply with either paragraph (c)(2)(ii)(A) or (B) of this section.

(A) For each instance that you change the bypass valve to the diverting position, you must submit to the Administrator within 10 days of the action the report specified in § 63.11985(c)(8). This report is required even if you elect to follow the procedures specified in § 63.11895 to establish an affirmative defense and submit the reports specified in § 63.11985(c)(4).

(B) You must install, maintain, and operate a bypass flow indicator as specified in paragraphs (c)(1)(i) and (ii) of this section and you must meet the requirements in paragraph (c)(1)(iii) and (iv) of this section for each instance that the flow indicator alarm is triggered.

(d) *Closed vent system inspection and monitoring requirements.* Except as provided in paragraph (d)(3) of this section, you must inspect each closed vent system as specified in paragraph (d)(1) or (2) of this section.

(1) *Hard-piping inspection.* If the closed vent system is constructed of hard-piping, you must comply with the requirements specified in paragraphs (d)(1)(i) and (ii) of this section.

(i) Conduct an initial inspection according to the procedures in paragraph (e) of this section.

(ii) Conduct annual inspections for visible, audible, or olfactory indications of leaks.

(2) *Ductwork inspection.* If the closed vent system is constructed of ductwork, you must conduct initial and annual inspections according to the procedures in paragraph (e) of this section.

(3) *Equipment that is unsafe to inspect.* You may designate any parts of the closed vent system as unsafe to inspect if you determine that personnel would be exposed to an immediate danger as a consequence of complying with the initial and annual closed vent system inspection requirements of this subpart.

(e) *Closed vent system inspection procedures.* Except as provided in paragraph (e)(4) of this section, you must comply with all provisions of paragraphs (e)(1) through (e)(3) of this section.

(1) *General.* Inspections must be performed during periods when HAP is being collected by or vented through the closed vent system. A leak is indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspection.

(2) *Inspection procedures.* Each closed vent system subject to this paragraph (e)(2) must be inspected according to the procedures specified in paragraphs (e)(2)(i) through (vii) of this section.

(i) Inspections must be conducted in accordance with Method 21 at 40 CFR part 60, appendix A–7, except as otherwise specified in this section.

(ii) Except as provided in paragraph (e)(2)(iii) of this section, the detection instrument must meet the performance criteria of Method 21 at 40 CFR part 60, appendix A–7, except the instrument response factor criteria in section 8.1.1.2 of Method 21 must be for the representative composition of the process fluid and not of each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, water, or other inerts that are not organic HAP or volatile organic compound, the representative stream response factor must be determined on an inert-free basis. You may determine the response factor at any concentration for which you will monitor for leaks.

(iii) If no instrument is available at the plant site that will meet the performance criteria of Method 21 at 40 CFR part 60, appendix A–7 specified in paragraph (e)(2)(ii) of this section, the instrument readings may be adjusted by multiplying by the representative response factor of the process fluid, calculated on an inert-free basis as described in paragraph (e)(2)(ii) of this section.

(iv) The detection instrument must be calibrated before use on each day of its use by the procedures specified in Method 21 at 40 CFR part 60, appendix A–7.

(v) Calibration gases must be as specified in paragraphs (e)(2)(v)(A) through (D) of this section.

(A) Zero air (less than 10 parts per million by volume hydrocarbon in air).

(B) Mixtures of methane in air at a concentration less than 10,000 parts per million by volume. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (e)(2)(ii) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(C) If the detection instrument's design allows for multiple calibration scales, then the lower scale must be calibrated with a calibration gas that is no higher than 2,500 parts per million by volume.

(D) Perform a calibration drift assessment, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 at 40 CFR part 60, appendix A–7, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in paragraph (g)(4) of this section. Divide these readings by the initial calibration values for each scale and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by the value specified in paragraph (e)(2)(v)(D)(*1*) of this section must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at your discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by the value specified in paragraph (e)(2)(v)(D)(*2*) of this section may be re-monitored.

(*1*) 100 minus the percent of negative drift, divided by 100.

(*2*) 100 plus the percent of positive drift, divided by 100.

(vi) You may elect to adjust or not adjust instrument readings for background. If you elect not to adjust readings for background, all such instrument readings must be compared directly to 500 parts per million by volume to determine whether there is a leak. If you elect to adjust instrument readings for background, you must measure background concentration using the procedures in this section. You must subtract the background reading from the maximum concentration indicated by the instrument.

(vii) If you elect to adjust for background, the arithmetic difference between the maximum concentration indicated by the instrument and the background level must be compared with 500 parts per million by volume for determining whether there is a leak.

(3) *Instrument probe.* The instrument probe must be traversed around all potential leak interfaces as described in Method 21 at 40 CFR part 60, appendix A–7.

(4) *Unsafe-to-inspect written plan requirements.* For equipment designated as unsafe to inspect according to the provisions of paragraph (d)(3) of this section, you must maintain and follow a written plan that requires inspecting the equipment as frequently as practical during safe-to-inspect times, but not more frequently than the annual inspection schedule otherwise applicable. You must still repair unsafe-to-inspect equipment according to the procedures in paragraph (f) of this section if a leak is detected.

(f) *Closed vent system leak repair provisions.* The provisions of this paragraph (f) apply to closed vent systems collecting HAP from an affected source.

(1) *Leak repair general for hard-piping.* If there are visible, audible, or olfactory indications of leaks at the time of the annual visual inspections required by paragraph (d)(1)(ii) of this section, you must follow the procedure specified in either paragraph (f)(1)(i) or (ii) of this section.

(i) You must eliminate the leak.

(ii) You must monitor the equipment according to the procedures in paragraph (e) of this section and comply with the leak repair provisions in paragraph (f)(2) of this section.

(2) *Leak repair schedule.* Leaks must be repaired as soon as practical, except as provided in paragraph (f)(3) of this section.

(i) A first attempt at repair must be made no later than 5 days after the leak is detected.

(ii) Except as provided in paragraph (f)(3) of this section, repairs must be completed no later than 15 days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.

(3) *Delay of repair.* Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible or unsafe without a closed vent system shutdown, as defined in § 63.12005, or if you determine that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment must be completed as soon as practical, but not later than the end of the next closed vent system shutdown.

(g) *Closed vent system records.* For closed vent systems, you must record the information specified in paragraphs (g)(1) through (5) of this section, as applicable.

(1) *Bypass records.* For each closed vent system that contains a bypass that could divert a vent stream away from the control device and to the atmosphere, or cause air intrusion into the control device, you must keep a record of the information specified in either paragraph (g)(1)(i) or (ii) of this section, as applicable.

(i) You must maintain records of any alarms triggered because flow was detected in the bypass, including the date and time the alarm was triggered, the duration of the flow in the bypass, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(ii) Where a seal mechanism is used to comply with paragraph (c)(2) of this section, hourly records of flow are not required. In such cases, you must record that the monthly visual inspection of the seals or closure mechanisms has been done, and must record the occurrence of all periods when the seal mechanism is broken, the bypass valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has been broken.

(2) *Inspection records.* For each instrumental or visual inspection conducted in accordance with paragraph (d)(1) or (2) of this section for closed vent systems collecting HAP from an affected source during which no leaks are detected, you must record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(3) *Leak records.* When a leak is detected from a closed vent system collecting HAP from an affected source, the information specified in paragraphs (g)(3)(i) through (vi) of this section must be recorded and kept for 5 years.

(i) The instrument and the equipment identification number and the operator name, initials, or identification number.

(ii) The date the leak was detected and the date of the first attempt to repair the leak.

(iii) The date of successful repair of the leak.

(iv) The maximum instrument reading measured by the procedures in paragraph (e) of this section after the leak is successfully repaired.

(v) Repair delayed and the reason for the delay if a leak is not repaired within 15 days after discovery of the leak. You may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(vi) Copies of the compliance reports as specified in § 63.11985(b)(9), if records are not maintained on a computerized database capable of generating summary reports from the records.

(4) *Instrument calibration records.* You must maintain records of the information specified in paragraphs (g)(4)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 at 40 CFR part 60, appendix A–7, and paragraph (e) of this section.

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 at 40 CFR part 60, appendix A–7.

(v) Results of each calibration drift assessment required by paragraph (e)(2)(v)(D) of this section (*i.e.,* instrument reading for calibration at end of the monitoring day and the calculated percent difference from the initial calibration value).

(vi) If you make your own calibration gas, a description of the procedure used.

(5) *Unsafe-to-inspect records.* If you designate equipment as unsafe-to-inspect as specified in paragraph (d)(3) of this section, you must keep the records specified in paragraph (g)(5)(i) and (ii) of this section.

(i) You must maintain the identity of unsafe-to-inspect equipment as specified in paragraph (d)(3) of this section.

(ii) You must keep a written plan for inspecting unsafe-to-inspect equipment as required by paragraph (e)(4) of this section and record all activities performed according to the written plan.

(h) *Closed vent systems in vacuum service.* If you operate and maintain a closed vent system in vacuum service as defined in § 63.12005, you must comply with the requirements in paragraphs (h)(1) through (3) of this section, and you are not required to comply with any other provisions of this section. Any incidence where a closed vent system designed to be in vacuum service is operating and not in vacuum service constitutes a violation of this rule, unless the closed vent system is meeting the requirements in paragraphs (a) through (g) of this section for closed vent systems that are not in vacuum service. Any such incidence during a performance test invalidates the performance test.

(1) *In vacuum service alarm.* You must install, maintain, and operate a pressure gauge and alarm system that will alert an operator immediately and automatically when the pressure is such that the closed vent system no longer meets the definition of in vacuum service as defined in § 63.12005. The alarm must be located such that the alert is detected and recognized easily by an operator.

(2) *In vacuum service alarm procedures.* If the alarm is triggered for a closed vent system operating in vacuum service as specified in paragraph (h)(1) of this section, you must immediately initiate procedures to identify the cause of the alarm. If the closed vent system is not in vacuum service, you must initiate procedures to get the closed vent system back in vacuum service as defined in § 63.12005, or you must immediately comply with the requirements in paragraphs (a) through (g) of this section for closed vent systems that are not in vacuum service.

(3) *In vacuum service alarm records and reports.* For any incidences where a closed vent system designed to be in vacuum service is not in vacuum service, you must submit to the Administrator within 10 days of the incident the report specified in § 63.11985(c)(8). This report is required even if you elect to follow the procedures specified in § 63.11895 to establish an affirmative defense and submit the reports specified in § 63.11985(c)(4).

§ 63.11935 What CEMS and CPMS requirements must I meet to demonstrate initial and continuous compliance with the emission standards for process vent control devices, resin strippers, and wastewater treatment processes?

(a) *General requirements for CEMS and CPMS.* You must meet the requirements in paragraph (b) of this section for each CEMS specified in § 63.11925(c) used to demonstrate compliance with the emission limits for process vents in Table 1 or 2 to this subpart. You must meet the CPMS requirements in paragraph (c) of this section and establish your operating limits in paragraph (d) of this section for each operating parameter specified in Table 6 to this subpart for each process vent control device, resin stripper, or wastewater treatment process specified in paragraphs (a)(1) through (3) of this section.

(1) For each control device specified in § 63.11925(c) that is used to comply with the emission limits for process vents in Table 1 or 2 to this subpart, except that flow indicators specified in § 63.11940(e) are not subject to the requirements of this section.

(2) For each resin stripper specified in § 63.11960(c) and used to comply with the emission limit for resin in Table 1 or 2 to this subpart.

(3) For each wastewater treatment process specified in § 63.11975(a) and used to comply with the emission limit for wastewater in Table 3 to this subpart.

(b) *CEMS.* You must install, operate, and maintain each CEMS according to paragraphs (b)(1) through (7) of this section and continuously monitor emissions.

(1) You must prepare your quality control program and site-specific performance evaluation test plan, as specified in § 63.8(d) and (e). You must submit your performance evaluation test plan to the Administrator for approval, as specified in § 63.8(e)(3).

(2) The monitoring equipment must be capable of providing a continuous record, recording data at least once every 15 minutes.

(3) You must conduct initial and periodic site-specific performance evaluations and any required tests of each CEMS according to your quality control program and site-specific performance evaluation test plan prepared as specified in § 63.8(d) and (e).

(4) If supplemental gases are added to the control device, you must correct the measured concentrations in accordance with § 63.11945(d)(1).

(5) You must operate and maintain the CEMS in continuous operation according to the quality control program and performance evaluation test plan. CEMS must record data at least once every 15 minutes.

(6) CEMS must meet the minimum accuracy and calibration frequency requirements specified in the performance specifications specified in paragraphs (b)(6)(i) and (ii) of this section, as applicable.

(i) A hydrogen chloride or dioxin/furan CEMS must meet the requirements of the promulgated performance specification for the CEMS.

(ii) A total hydrocarbon CEMS must meet the requirements of 40 CFR Part 60, Appendix B, performance specification 8A.

(7) Before commencing or ceasing use of a CEMS system, you must notify the Administrator as specified in paragraphs (b)(6)(i) and (ii) of this section.

(i) You must notify the Administrator 1 month before starting use of the continuous emissions monitoring system.

(ii) You must notify the Administrator 1 month before stopping use of the continuous emissions monitoring system, in which case you must also conduct a performance test within 60 days of ceasing operation of the system.

(c) *CPMS.* You must install, maintain, and operate each CPMS as specified in paragraphs (c)(1) through (6) of this section and continuously monitor operating parameters.

(1) As part of your quality control program and site-specific performance evaluation test plan prepared as specified in § 63.8(d) and (e), you must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements specified in paragraphs (c)(1)(i) through (v) of this section and § 63.8(d). You are not required to submit the plan for approval unless requested by the Administrator. You may request approval of monitoring system quality assurance and quality control procedure alternatives to those specified in paragraphs (c)(1)(i) through (v) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations.

(ii) Sampling interface (*e.g.,* thermocouple) location such that the monitoring system will provide representative measurements.

(iii) Equipment performance checks, calibrations, or other audit procedures.

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1) and (3).

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) The monitoring equipment must be capable of providing a continuous

record, recording data at least once every 15 minutes.

(3) You must install, operate, and maintain each CPMS required in this paragraph (c) according to the procedures and requirements in your site-specific monitoring plan.

(4) You must conduct an initial and periodic site-specific performance evaluation tests of each CPMS according to your site-specific monitoring plan.

(5) All CPMS must meet the specific parameter (*e.g.,* minimum accuracy and calibration frequency) requirements specified in § 63.11940 and Table 8 to this subpart.

(6) Monitoring equipment for temperature, pressure, volumetric flow rate, mass flow rate, and conductivity must be capable of measuring the appropriate parameter over a range that extends at least 20 percent beyond the normal expected operating range of values for that parameter. The data recording system associated with affected CPMS must have a resolution that is equal to or better than one-half of the required system accuracy.

(d) *Establish operating limit.* For each operating parameter that must be monitored in § 63.11925(c) for process vent control devices, in § 63.11960(c) for resin strippers, and in § 63.11975(a) for wastewater treatment processes, you must establish an operating limit as specified in paragraphs (d)(1) through (6) of this section. You must establish each operating limit as an operating parameter range, minimum operating parameter level, or maximum operating parameter level as specified in Table 6 to this subpart. Where this subpart does not specify which format to use for your operating limit (*e.g.,* operating range or minimum operating level), you must determine which format is best to establish proper operation of the control device, resin stripper, or treatment process such that you are meeting the emission limits specified in Table 1, 2, or 3 to this subpart.

(1) For process vent control devices, the operating limit established for each monitored parameter specified in § 63.11940 must be based on the operating parameter values recorded during any performance test conducted to demonstrate compliance in § 63.11925(d)(4) and (e)(4) and may be supplemented by engineering assessments and/or manufacturer's recommendations. You are not required to conduct performance tests over the entire range of allowed operating parameter values. The established operating limit must represent the conditions for which the control device is meeting the emission limits specified in Table 1 or 2 to this subpart.

(2) For resin strippers, the operating limit established for each monitoring parameter specified in § 63.11960(c) must be based on the operating parameter values recorded during any resin sampling event specified in § 63.11960(b)(2) or (4) or § 63.11960(c)(3) or (5). You may use engineering assessments and/or manufacturer's recommendations to supplement the initial performance test results when establishing the operating limit. The established operating limit must represent the conditions for which the resin stripper is meeting the emission limits specified in Table 1 or 2 to this subpart.

(3) For wastewater treatment processes treating a wastewater stream to achieve the vinyl chloride concentration specified in Table 3 to this subpart, the operating limit established for each monitored parameter specified in § 63.11975(a)(1) must be based on the operating parameter level recorded during any sampling event specified in § 63.11970(a)(1)(ii) or (iii) or § 63.11975(a)(3). You may use engineering assessments and/or manufacturer's recommendations to supplement the initial testing results when establishing the operating limit. The established operating limit must represent the conditions for which the treatment process is meeting the requirements specified in Table 3 to this subpart.

(4) You must include as part of the notification of compliance status or the operating permit application or amendment, the information in paragraphs (d)(4)(i) through (iv) of this section, as applicable, for each process vent control device, resin stripper, and wastewater treatment process requiring operating limits.

(i) Descriptions of monitoring devices and monitoring frequencies for each emission point and operating scenario.

(ii) The established operating limit of the monitored parameter(s).

(iii) The rationale for the established operating limit, including any data and calculations used to develop the operating limit and a description of why the operating limit indicates proper operation of the control device, resin stripper, or wastewater treatment process.

(iv) The rationale used to determine which format to use for your operating limit (*e.g.,* operating range, minimum operating level, or maximum operating level), where this subpart does not specify which format to use.

(5) For batch processes, you may establish operating limits for individual batch emission episodes, including each distinct episode of process vent emissions or each individual type of batch process that generates wastewater, if applicable. You must provide rationale in a batch precompliance report as specified in § 63.11985(c)(2) instead of the notification of compliance status for the established operating limit. You must include any data and calculations used to develop the operating limits and a description of why each operating limit indicates proper operation of the control device during the specific batch emission episode, or of the wastewater treatment process or resin stripper during the individual batch operation generating wastewater or stripped resin.

(6) If you elect to establish separate operating limits for different batch emission episodes within a batch process as specified in paragraph (d)(5) of this section, you must maintain daily records indicating each point at which you change from one operating limit to another, even if the monitoring duration for an operating limit is less than 15 minutes. You must maintain a daily record according to § 63.11990(e)(4)(i).

(e) *Reduction of CPMS and CEMS data.* You must reduce CEMS and CPMS data to 1-hour averages according to § 63.8(g) to compute the average values for demonstrating compliance specified in §§ 63.11925(e)(3)(ii), 63.11925(e)(4)(ii)(B), 63.11960(c)(2), and 63.11975(a)(2) for CEMS and CPMS, as applicable.

§ 63.11940 What continuous monitoring requirements must I meet for control devices required to install CPMS to meet the emission limits for process vents?

As required in § 63.11925(c), you must install and operate the applicable CPMS specified in paragraphs (a) through (i) of this section for each control device you use to comply with the emission limits for process vents in Table 1 or 2 to this subpart. You must monitor, record, and calculate CPMS data averages as specified in Table 6 to this subpart. Paragraph (j) of this section provides an option to propose alternative monitoring parameters or procedures.

(a) *Flow indicator.* If flow to a control device could be intermittent, you must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow.

(b) *Incinerator monitoring.* If you are using an incinerator to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must equip the incinerator with the monitoring equipment specified in paragraphs (b)(1) through (3) of this section, as applicable.

(1) If an incinerator other than a catalytic incinerator is used, you must install a temperature monitoring device in the fire box or in the ductwork immediately downstream of the fire box in a position before any substantial heat exchange occurs.

(2) Except as provided in paragraph (b)(3) of this section, where a catalytic incinerator is used, you must install temperature monitoring devices in the gas stream immediately before and after the catalyst bed. You must monitor the temperature differential across the catalyst bed.

(3) Instead of complying with paragraph (b)(2) of this section, and if the temperature differential between the inlet and outlet of the catalytic incinerator during normal operating conditions is less than 10 degrees Celsius (18 degrees Fahrenheit), you may elect to monitor the inlet temperature and conduct catalyst checks as specified in paragraphs (b)(3)(i) and (ii) of this section.

(i) You must conduct annual sampling and analysis of the catalyst activity (*i.e.,* conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures. If problems are found during the catalyst activity test, you must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations within 15 days or by the next time any process vent stream is collected by the control device, whichever is sooner.

(ii) You must conduct annual internal inspections of the catalyst bed to check for fouling, plugging, or mechanical breakdown. You must also inspect the bed for channeling, abrasion, and settling. If problems are found during the annual internal inspection of the catalyst, you must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations within 15 days or by the next time any process vent stream is collected by the control device, whichever is later. If the catalyst bed is replaced and is not of like or better kind and quality as the old catalyst then you must conduct a new performance test according to § 63.11945 to determine destruction efficiency. If a catalyst bed is replaced and the replacement catalyst is of like or better kind and quality as the old catalyst, then a new performance test to determine destruction efficiency is not required.

(c) *Absorber and acid gas scrubber monitoring.* If you are using an absorber or acid gas scrubber to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must install the monitoring equipment specified in paragraphs (c)(1) through (3) of this section.

(1) Install and operate the monitoring equipment as specified in either paragraph (c)(1)(i) or (ii) of this section.

(i) A flow meter to monitor the absorber or acid gas scrubber influent liquid flow.

(ii) A flow meter to monitor the absorber or acid gas scrubber influent liquid flow and the gas stream flow using one of the procedures specified in paragraphs (c)(1)(ii)(A), (B), or (C) of this section. You must monitor the liquid-to-gas ratio determined by dividing the flow rate of the absorber or acid gas scrubber influent by the gas flow rate. The units of measure must be consistent with those used to calculate this ratio during the performance test.

(A) Determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.

(B) Measure the gas stream flow at the absorber or acid gas scrubber inlet.

(C) If you have previously determined compliance for a scrubber that requires a determination of the liquid-to-gas ratio, you may use the results of that test provided the test conditions are representative of current operation.

(2) Install and operate the monitoring equipment as specified in either paragraph (c)(2)(i), (ii), or (iii) of this section.

(i) Install and operate pressure gauges at the inlet and outlet of the absorber or acid gas scrubber to monitor the pressure drop through the absorber or acid gas scrubber.

(ii) If the difference in the inlet gas stream temperature and the inlet liquid stream temperature is greater than 38 degrees Celsius, you may install and operate a temperature monitoring device at the scrubber gas stream exit.

(iii) If the difference between the specific gravity of the scrubber effluent scrubbing fluid and specific gravity of the scrubber inlet scrubbing fluid is greater than or equal to 0.02 specific gravity units, you may install and operate a specific gravity monitoring device on the inlet and outlet of the scrubber.

(3) If the scrubbing liquid is a reactant (*e.g.,* lime, ammonia hydroxide), you must install and operate one of the devices listed in either paragraph (c)(3)(i), (ii), or (iii) of this section.

(i) A pH monitoring device to monitor the pH of the scrubber liquid effluent.

(ii) A caustic strength monitoring device to monitor the caustic strength of the scrubber liquid effluent.

(iii) A conductivity monitoring device to monitor the conductivity of the scrubber liquid effluent.

(d) *Regenerative adsorber monitoring.* If you are using a regenerative adsorber to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must install and operate the applicable monitoring equipment listed in paragraphs (d)(1) through (5) of this section, and comply with the requirements in paragraphs (d)(6) and (7) of this section. If the adsorption system water is deemed as wastewater or process vents as specified in § 63.11935, it is subject to the requirements in this subpart.

(1) For non-vacuum regeneration systems, an integrating regeneration stream flow monitoring device having an accuracy of ±10 percent, capable of recording the total regeneration stream mass for each regeneration cycle. For non-vacuum regeneration systems, an integrating regeneration stream flow monitoring device capable of continuously recording the total regeneration stream mass flow for each regeneration cycle.

(2) For non-vacuum regeneration systems, an adsorber bed temperature monitoring device, capable of continuously recording the adsorber bed temperature after each regeneration and within 15 minutes of completing any temperature regulation (cooling or warming to bring bed temperature closer to vent gas temperature) portion of the regeneration cycle.

(3) For non-vacuum and non-steam regeneration systems, an adsorber bed temperature monitoring device capable of continuously recording the bed temperature during regeneration, except during any temperature regulating (cooling or warming to bring bed temperature closer to vent gas temperature) portion of the regeneration cycle.

(4) For a vacuum regeneration system, a pressure transmitter installed in the vacuum pump suction line capable of continuously recording the vacuum level for each minute during regeneration. You must establish a minimum target and a length of time at which the vacuum must be below the minimum target during regeneration.

(5) A device capable of monitoring the regeneration frequency (*i.e.,* operating time since last regeneration) and duration.

(6) You must perform a verification of the adsorber during each day of operation. The verification must be through visual observation or through an automated alarm or shutdown system that monitors and records system

operational parameters. The verification must verify that the adsorber is operating with proper valve sequencing and cycle time.

(7) You must conduct weekly measurements of the carbon bed outlet volatile organic compounds concentration, as specified in this paragraph (d)(7), over the last 5 minutes of an adsorption cycle for each carbon bed. For regeneration cycles longer than 1 week, you must perform the measurement over the last 5 minutes of each adsorption cycle for each carbon bed. The outlet concentration of volatile organic compounds must be measured using a portable analyzer, in accordance with Method 21 at 40 CFR part 60, appendix A–7, for open-ended lines. Alternatively, outlet concentration of HAP(s) may be measured using chromatographic analysis using Method 18 at 40 CFR part 60, appendix A–6.

(e) *Non-regenerative adsorber monitoring.* If you are using a non-regenerative adsorber, or canister type system that is sent off site for regeneration or disposal, to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must install a system of dual adsorber units in series and conduct the monitoring and bed replacement as specified in paragraphs (e)(1) through (4) of this section.

(1) Establish the average adsorber bed life by conducting daily monitoring of the outlet volatile organic compound or HAP concentration, as specified in this paragraph (e)(1), of the first adsorber bed in series until breakthrough occurs for the first three adsorber bed change-outs. The outlet concentration of volatile organic compounds must be measured using a portable analyzer, in accordance with Method 21 at 40 CFR part 60, Appendix A–7, for open-ended lines. Alternatively, outlet concentration of HAP may be measured using chromatographic analysis using Method 18 at 40 CFR part 60, Appendix A–6. Breakthrough of the bed is defined as the time when the level of HAP detected is at the highest concentration allowed to be discharged from the adsorber system.

(2) Once the average life of the bed is determined, conduct ongoing monitoring as specified in paragraphs (e)(2)(i) through (iii) of this section.

(i) Except as provided in paragraphs (e)(2)(ii) and (iii) of this section, conduct daily monitoring of the adsorber bed outlet volatile organic compound or HAP concentration, as specified in paragraph (e)(1) of this section.

(ii) You may conduct monthly monitoring if the adsorbent has more than 2 months of life remaining, as determined by the average primary adsorber bed life, established in paragraph (e)(1) of this section, and the date the adsorbent was last replaced.

(iii) You may conduct weekly monitoring if the adsorbent has more than 2 weeks of life remaining, as determined by the average primary adsorber bed life, established in paragraph (e)(1) of this section, and the date the adsorbent was last replaced.

(3) The first adsorber in series must be replaced immediately when breakthrough is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph (e)(3), “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons.

(4) In lieu of replacing the first adsorber immediately, you may elect to monitor the outlet of the second canister beginning on the day the breakthrough between the first and second canister is identified and each day thereafter. This daily monitoring must continue until the first canister is replaced. If the constituent being monitored is detected at the outlet of the second canister during this period of daily monitoring, both canisters must be replaced within 8 hours of the time of detection of volatile organic compounds or HAP at 90 percent of the allowed level (90 percent of breakthrough definition).

(f) *Condenser monitoring.* If you are using a condenser to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must install and operate a condenser exit gas temperature monitoring device.

(g) *Sorbent injection monitoring.* If you are using sorbent injection as an emission control technique to comply with an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must equip sorbent injection systems with the monitoring equipment specified in paragraphs (g)(1) through (3) of this section, as applicable. You must also meet the requirements in paragraph (h) of this section for the fabric filters used for sorbent collection.

(1) A flow meter to monitor the rate of sorbent injection.

(2) A flow meter to monitor the sorbent injection system carrier gas flow rate.

(3) You must install and operate a temperature monitoring device to monitor the temperature in the ductwork immediately downstream of the fire box of the combustion device. Also, if you are using a particulate matter control device upstream of the adsorbent injection system, you must install and operate a temperature monitoring device to monitor the temperature in the ductwork immediately downstream of the particulate matter control device.

(h) *Fabric filter monitoring.* If you are using a fabric filter to meet an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must equip the fabric filter with a bag leak detection system that meets the requirements in paragraphs (h)(1) through (11) of this section. You must conduct the performance evaluation specified in paragraph (h)(12) of this section.

(1) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer’s written specifications and recommendations and in accordance with the guidance provided in Fabric Filter Bag Leak Detection Guidance, EPA–454/R–98–015, September 1997 (incorporated by reference, see § 63.14) such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. You must calculate the alarm time as specified in paragraphs (h)(1)(i) through (iv).

(i) If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.

(ii) If corrective action is required, each alarm time shall be counted as a minimum of 1 hour.

(iii) If you take longer than 1 hour to initiate corrective action, each alarm time (*i.e.,* time that the alarm sounds) is counted as the actual amount of time taken by you to initiate corrective action.

(iv) Your maximum alarm time is equal to 5 percent of the operating time during a 6-month period.

(2) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(3) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(4) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(5) The bag leak detection system must be equipped with an alarm system that will alert an operator automatically

when an increase in particulate matter emissions over a preset level is detected. The alarm must be located such that the alert is detected and recognized easily by an operator.

(6) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system must be installed in each fabric filter compartment or cell. If a negative pressure or induced air filter is used, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(7) Calibration of the bag leak detection system must, at a minimum, consist of establishing the relative baseline output level by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(8) Following initial adjustment, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as established in an operation and maintenance plan required in paragraph (h)(10) of this section that is to be submitted with the notification of compliance status report. In no event may the sensitivity be increased more than 100 percent or decreased by more than 50 percent over a 365-day period unless such adjustment follows a complete baghouse inspection that demonstrates the baghouse is in good operating condition.

(9) If the alert on a bag leak detection system is triggered, you must, within 1 hour of an alarm, initiate the procedures to identify the cause of the alarm and take corrective action as specified in the corrective action plan required in paragraph (h)(11) of this section.

(10) You must maintain an operation and maintenance plan describing the items in paragraphs (h)(10)(i) through (v) of this section.

(i) Installation of the bag leak detection system.

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established.

(iii) Operation of the bag leak detection system, including quality assurance procedures.

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list.

(v) How the bag leak detection system output will be recorded and stored.

(11) You must maintain a corrective action plan describing corrective actions to be taken, and the timing of those actions when the particulate matter concentration exceeds the setpoint and activates the alarm. Corrective actions may include, but are not limited to the actions listed in paragraphs (h)(11)(i) through (vi) of this section.

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in particulate matter emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective fabric filter compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Shutting down the control device producing the particulate matter emissions.

(12) You must conduct an initial performance evaluation of each continuous monitoring system and bag leak detection system, as applicable, in accordance with your quality control program site-specific performance evaluation test plan (or site-specific monitoring plan specified in § 63.11935(c) for CPMS), according to § 63.8(d). For the purposes of this subpart, the provisions of § 63.8(d), also apply to the bag leak detection system.

(i) *Other control devices.* If you use a control device other than those listed in this subpart to comply with an emission limit in Table 1 or 2 to this subpart and you are required to use CPMS as specified in § 63.11925(c), you must comply with the requirements as specified in paragraphs (i)(1) and (2) of this section.

(1) Submit a description of the planned monitoring, recordkeeping and reporting procedures as required in § 63.11985(b)(5)(iv). The Administrator will approve, deny, or modify the proposed monitoring, reporting and recordkeeping requirements as part of the review of the plan or through the review of the permit application or by other appropriate means.

(2) You must establish operating limits for monitored parameters that are approved by the Administrator. To establish the operating limit, the information required in § 63.11935(d) must be submitted in the notification of compliance status report specified in § 63.11985(a).

(j) *Alternatives to monitoring requirements.*

(1) You may request approval to use alternatives to the continuous operating parameter monitoring listed in this section, as specified in § 63.11985(c)(5).

(2) You may request approval to monitor a different parameter than those established in § 63.11935(d) or to set unique monitoring parameters, as specified in § 63.11985(c)(6). Until permission to use an alternative monitoring procedure, method, or parameter has been granted by the Administrator, you remain subject to the requirements of this subpart.

§ 63.11945 What performance testing requirements must I meet for process vents?

(a) *General.* For each control device used to meet a total organic HAP, vinyl chloride, hydrogen chloride, and/or dioxin/furan emission limit for process vents in Table 1 or 2 to this subpart, you must conduct the initial and periodic performance tests required in § 63.11925(d) and (e) and as specified in § 63.11896 using the applicable test methods and procedures specified in Table 9 to this subpart and paragraphs (b) through (d) of this section.

(b) *Process operating conditions.* You must conduct performance tests under the conditions specified in paragraphs (b)(1) through (3) of this section, as applicable. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(1) *Continuous process vents.* For continuous process vents, you must conduct all performance tests at maximum representative operating conditions for the process. For continuous compliance, you must operate the control device as close as possible to your operating limit(s) for the control device established during the initial or subsequent performance tests specified in § 63.11925(d) and (e). If an operating limit is a range, then you must operate the control device as close as possible to the maximum or minimum operating limit for the control device, whichever results in higher emissions (*i.e.,* lower emission reduction).

(2) *Batch process operations.* Testing must be conducted at absolute worst-case conditions or hypothetical worst-case conditions as specified in paragraph (c) of this section.

(3) *Combination of both continuous and batch unit operations.* You must conduct performance tests when the batch process vents are operating at absolute worst-case conditions or hypothetical worst-case conditions, as specified in paragraphs (c)(1) and (2) of this section, and at maximum representative operating conditions for the process. For continuous compliance, you must operate the control device as

close as possible to your operating limit(s) for the control device established during the initial or subsequent performance tests specified in § 63.11925 (d) and (e). If an operating limit is a range, then you must operate the control device as close as possible to the maximum or minimum operating limit for the control device, whichever results in higher emissions (*i.e.*, lower emission reduction), unless the Administrator specifies or approves alternate operating conditions.

(c) *Batch worst-case conditions.* The absolute worst-case conditions for batch process operations must be characterized by the criteria presented in paragraph (c)(1) of this section. The hypothetical worst-case conditions for batch process operations must be characterized by the criteria presented in paragraph (c)(2) of this section. In all cases, a site-specific plan must be submitted to the Administrator for approval prior to testing in accordance with § 63.7(c). The test plan must include the emission profile described in paragraph (c)(3) of this section.

(1) *Absolute worst-case conditions.* For batch process operations, absolute worst-case conditions are defined by the criteria presented in paragraph (c)(1)(i) of this section if the maximum load is the most challenging condition for the control device. Otherwise, absolute worst-case conditions are defined by the conditions in paragraph (c)(1)(ii) of this section. You must consider all relevant factors, including load and compound-specific characteristics in defining absolute worst-case conditions.

(i) A 1-hour period of time in which the inlet to the control device contains the highest HAP mass loading rate, in pounds per hour, capable of being vented to the control device. An emission profile as described in paragraph (c)(3) of this section must be used to identify the 1-hour period of maximum HAP loading.

(ii) The period of time when the HAP loading or stream composition (including non-HAP) is most challenging for the control device. These conditions include, but are not limited to the following:

(A) Periods when the stream contains the highest combined organic load, in pounds per hour, described by the emission profiles in paragraph (c)(3) of this section.

(B) Periods when the streams contain HAP constituents that approach limits of solubility for scrubbing media.

(C) Periods when the streams contain HAP constituents that approach limits of adsorptivity for adsorption systems.

(2) *Hypothetical worst-case conditions.* For batch process operations, hypothetical worst-case conditions are simulated test conditions that, at a minimum, contain the highest hourly HAP load of emissions that would be predicted to be vented to the control device from the emissions profile described in paragraphs (c)(3)(ii) or (iii) of this section.

(3) *Emission profile.* For batch process operations, you must develop an emission profile for the vent to the control device that describes the characteristics of the vent stream at the inlet to the control device under worst-case conditions. The emission profile must be developed based on any one of the procedures described in paragraphs (c)(3)(i) through (iii) of this section.

(i) *Emission profile by process.* The emission profile must consider all batch emission episodes that could contribute to the vent stack for a period of time that is sufficient to include all processes venting to the stack and must consider production scheduling. The profile must describe the HAP load to the device that equals the highest sum of emissions from the episodes that can vent to the control device in any given hour. Emissions per episode must be calculated using the procedures specified in § 63.11950. Emissions per episode must be divided by the duration of the episode only if the duration of the episode is longer than 1 hour.

(ii) *Emission profile by equipment.* The emission profile must consist of emissions that meet or exceed the highest emissions, in pounds per hour that would be expected under actual processing conditions. The profile must describe equipment configurations used to generate the emission events, volatility of materials processed in the equipment, and the rationale used to identify and characterize the emission events. The emissions may be based on using a compound more volatile than compounds actually used in the process(es), and the emissions may be generated from all equipment in the process(es) or only selected equipment.

(iii) *Emission profile by capture and control device limitation.* The emission profile must consider the capture and control system limitations and the highest emissions, in pounds per hour that can be routed to the control device, based on maximum flowrate and concentrations possible because of limitations on conveyance and control equipment (*e.g.,* fans and lower explosive level alarms).

(d) *Concentration correction calculation.* If a combustion device is the control device and supplemental combustion air is used to combust the emissions, the concentration of total organic HAP, vinyl chloride, and hydrogen chloride must be corrected as specified in paragraph (d)(1) or (2) of this section. If a control device other than a combustion device is used to comply with an outlet concentration emission limit for batch process vents, you must correct the actual concentration for supplemental gases as specified in paragraph (d)(3) of this section.

(1) Determine the concentration of total organic HAP, vinyl chloride, or hydrogen chloride corrected to 3-percent oxygen (C_c) using Equation 1 of this section.

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \quad \text{(Eq. 1)}$$

Where:

C_c = Concentration of total organic HAP, vinyl chloride, or hydrogen chloride corrected to 3-percent oxygen, dry basis, parts per million by volume.

C_m = Concentration of total organic HAP, vinyl chloride, or hydrogen chloride, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percentage by volume.

(2) To determine the oxygen concentration, you must use the emission rate correction factor (or excess air), integrated sampling and analysis procedures of Method 3, 3A, or 3B at 40 CFR part 60, appendix A–2, or ANSI/ASME PTC 19.10–1981, “Flue and Exhaust Gas Analyses” [Part 10, Instruments and Apparatus] (incorporated by reference, see § 63.14).

(3) Correct the measured concentration for supplemental gases using Equation 2 of this section. Process knowledge and representative operating data may be used to determine the fraction of the total flow due to supplemental gas.

$$C_a = C_m \left(\frac{Q_s + Q_a}{Q_a}\right) \quad \text{(Eq. 2)}$$

Where:

C_a = Corrected outlet concentration of HAP, dry basis, parts per million by volume (ppmv).

C_m = Actual concentration of HAP measured at control device outlet, dry basis, ppmv.

Q_a = Total volumetric flow rate of all gas streams vented to the control device, except supplemental gases.

Q_s = total volumetric flow rate of supplemental gases.

§ 63.11950 What emissions calculations must I use for an emission profile by process of my batch process operation?

Except as specified in paragraph (i) of this section, if you choose to develop an emission profile by process for your batch process operation as specified in § 63.11945(c)(3)(i) when determining your absolute worst-case conditions, you must calculate emissions from episodes caused by vapor displacement, purging a partially filled vessel, heating, depressurization, vacuum operations, gas evolution, air drying, or empty vessel purging, using the applicable procedures in paragraphs (a) through (h) of this section.

(a) *Vapor displacement.* You must calculate emissions from vapor displacement due to transfer of material using Equation 3 of this section.

$$E = \left(\frac{V}{RT}\right) \sum_{i=1}^{n} P_i (MW_i) \quad \text{(Eq. 3)}$$

Where:

E = Mass of HAP emitted.

V = Volume of gas displaced from the vessel.

R = Ideal gas law constant.

T = Temperature of the vessel vapor space; absolute.

P_i = Partial pressure of the individual HAP.

MW_i = Molecular weight of the individual HAP.

n = Number of HAP compounds in the emission stream.

i = Identifier for a HAP compound.

(b) *Gas sweep of a partially filled vessel.* You must calculate emissions from purging a partially filled vessel using Equation 4 of this section. The pressure of the vessel vapor space may be set equal to 760 millimeters of mercury (mmHg). You must multiply the HAP partial pressure in Equation 4 of this section by a HAP-specific saturation factor determined in accordance with Equations 5 through 7 of this section. Solve Equation 5 of this section iteratively beginning with saturation factors (in the right-hand side of the equation) of 1.0 for each condensable compound. Stop iterating when the calculated saturation factors for all compounds are the same to two significant figures for subsequent iterations. Note that for multi-component emission streams, saturation factors must be calculated for all condensable compounds, not just the HAP.

$$E = \sum_{i=1}^{n} P_i MW_i \left(\frac{Vt}{RT}\right) \left(\frac{P_T}{P_T - \sum_{j=1}^{m}(P_j)}\right) \quad \text{(Eq. 4)}$$

Where:

E = Mass of HAP emitted.

V = Purge flow rate of the noncondensable gas at the temperature and pressure of the vessel vapor space.

R = Ideal gas law constant.

T = Temperature of the vessel vapor space; absolute.

P_i = Partial pressure of the individual HAP at saturated conditions.

P_j = Partial pressure of individual condensable compounds (including HAP) at saturated conditions.

P_T = Pressure of the vessel vapor space.

MW_i = Molecular weight of the individual HAP.

t = Time of purge.

n = Number of HAP compounds in the emission stream.

i = Identifier for a HAP compound.

j = Identifier for a condensable compound.

m = Number of condensable compounds (including HAP) in the emission stream.

$$S_i = \frac{K_i A}{K_i A + V + \sum_{i=1}^{n} S_i V_i^{sat}} \qquad \text{(Eq. 5)}$$

$$V_i^{sat} = \frac{VP_i}{\left(P_T - \sum_{i=1}^{n} P_i\right)} \qquad \text{(Eq. 6)}$$

$$K_i = K_o \left(\frac{M_o}{M_i}\right)^{1/3} \qquad \text{(Eq. 7)}$$

Where:

S_i = Saturation factor for individual condensable compounds.

P_i = Partial pressure of individual condensable compounds at saturated conditions.

P_T = Pressure of the vessel vapor space.

A = Surface area of liquid.

V = Purge flow rate of the noncondensable gas.

V_i^{sat} = Volumetric flow rate of individual condensable compounds at saturated vapor pressure.

K_i = Mass transfer coefficient of individual condensable compounds in the emission stream.

K_o = Mass transfer coefficient of reference compound (*e.g.,* 0.83 cm/s for water).

M_o = Molecular weight of reference compound (*e.g.,* 18.02 for water).

M_i = Molecular weight of individual condensable compounds in the emission stream.

n = Number of condensable compounds in the emission stream.

(c) *Heating.* You must calculate emissions caused by the heating of a vessel to a temperature lower than the boiling point using the procedures in paragraph (c)(1) of this section. If the contents of a vessel are heated to the boiling point, you must calculate emissions using the procedures in paragraph (c)(2) of this section.

(1) If the final temperature to which the vessel contents are heated is lower than the boiling point of the HAP in the vessel, you must calculate the mass of HAP emitted per episode using Equation 8 of this section. The average gas space molar volume during the heating process is calculated using Equation 9 of this section. The difference in the number of moles of condensable in the vessel headspace between the initial and final temperatures is calculated using Equation 10 of this section.

$$E = MW_{HAP}\left[N_{avg}\ \ln\left[\frac{P_T - \sum_{i=1}^{n}\left(P_{i,1}\right)}{P_T - \sum_{i=1}^{n}\left(P_{i,2}\right)}\right] - \left(n_{i,2} - n_{i,1}\right)\right] \qquad \text{(Eq. 8)}$$

Where:

E = Mass of HAP vapor displaced from the vessel being heated.

N_{avg} = Average gas space molar volume during the heating process.

P_T = Total pressure in the vessel.

$P_{i,1}$ = Partial pressure of the individual HAP compounds at initial temperature (T_1).

$P_{i,2}$ = Partial pressure of the individual HAP compounds at final temperature (T_2).

MW_{HAP} = Average molecular weight of the HAP compounds calculated using Equation 13 of this section.

$n_{i,1}$ = Number of moles of condensable in the vessel headspace at initial temperature (T_1).

$n_{i,2}$ = Number of moles of condensable in the vessel headspace at final temperature (T_2).

n = Number of HAP compounds in the emission stream.

ln = Natural logarithm.

$$N_{avg} = \frac{VP_T}{2R}\left(\frac{1}{T_1} + \frac{1}{T_2}\right) \qquad \text{(Eq. 9)}$$

Where:

N_{avg} = Average gas space molar volume during the heating process.

V = Volume of free space in vessel.

P_T = Total pressure in the vessel.

R = Ideal gas law constant.

T_1 = Initial temperature of the vessel.

T_2 = Final temperature of the vessel.

$$\left(n_{i,2} - n_{i,1}\right) = \frac{V}{RT_2}\sum_{i=1}^{n} P_{i,2} - \frac{V}{RT_1}\sum_{i=1}^{n} P_{i,1} \qquad \text{(Eq. 10)}$$

Where:

V = Volume of free space in vessel.

R = Ideal gas law constant.

T_1 = Initial temperature in the vessel.

T_2 = Final temperature in the vessel.

$P_{i,1}$ = Partial pressure of the individual HAP compounds at T_1.

$P_{i,2}$ = Partial pressure of the individual HAP compounds at T_2.

n = Number of HAP compounds in the emission stream.

(2) If the final temperature to which the vessel contents are heated is at the boiling point or higher, you must calculate emissions using the procedure in paragraphs (c)(2)(i) and (ii) of this section.

(i) To calculate the emissions from heating to the boiling point use Equations 11, 12, and 13 of this section. (Note that $Pa_2 = 0$ in the calculation of $\Delta\eta$ in Equation 12 of this section.)

$$E = \Delta\eta \times \frac{\sum_{i=1}^{n} P_i MW_{HAP}}{P_T - \sum_{j=1}^{m}\left(P_j\right)} \qquad \text{(Eq. 11)}$$

Where:

E = Mass of HAP emitted.

$\Delta\eta$ = The number of moles of noncondensable displaced from the vessel, as calculated using Equation 12 of this section.

P_T = Pressure in the receiver.

P_i = Partial pressure of the individual HAP determined at the exit temperature of the condenser or at the conditions of the dedicated receiver.

P_j = Partial pressure of the individual condensable (including HAP) determined at the exit temperature of the condenser or at the conditions of the dedicated receiver.

n = Number of HAP compounds in the emission stream.

i = Identifier for a HAP compound.

j = Identifier for a condensable compound.

MW_{HAP} = The average molecular weight of HAP in vapor exiting the dedicated receiver, as calculated using Equation 13 of this section with partial pressures determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

m = Number of condensable compounds (including HAP) in the emission stream.

$$\Delta\eta = \frac{V}{R}\left[\left(\frac{Pa_1}{T_1}\right) - \left(\frac{Pa_2}{T_2}\right)\right] \qquad \text{(Eq. 12)}$$

$$MW_{HAP} = \sum_{i=1}^{n} \frac{\left(\left(P_i\right)_{T_1} + \left(P_i\right)_{T_2}\right) MW_i}{\sum_{i=1}^{n}\left(\left(P_i\right)_{T_1} + \left(P_i\right)_{T_2}\right)} \qquad \text{(Eq. 13)}$$

Where:

$\Delta\eta$ = Number of moles of noncondensable gas displaced from the vessel.

V = Volume of free space in the vessel.

R = Ideal gas law constant.

T_1 = Initial temperature of vessel contents, absolute.

T_2 = Final temperature of vessel contents, absolute.

Pa_n = Partial pressure of noncondensable gas in the vessel headspace at initial (n=1) and final (n=2) temperature.

MW_{HAP} = The average molecular weight of HAP in vapor exiting the dedicated receiver.

$(P_i)_{Tn}$ = Partial pressure of each HAP in the vessel headspace at initial (T1) and final (T2) temperature of the receiver.

MW_i = Molecular weight of the individual HAP.

n = Number of HAP compounds in the emission stream.

i = Identifier for a HAP compound.

(ii) While boiling, the vessel must be operated with a properly operated process condenser. An initial demonstration that a process condenser is properly operated must be conducted during the boiling operation and documented in the notification of compliance status report described in § 63.11985(a). You must either measure the liquid temperature in the receiver or the temperature of the gas stream exiting the condenser and show it is less than the boiling or bubble point of the HAP(s) in the vessel; or perform a material balance around the vessel and condenser and show that at least 99 percent of the recovered HAP vaporized while boiling is condensed. This demonstration is not required if the process condenser is followed by a condenser acting as a control device or if the control device is monitored using a CEMS.

(d) *Depressurization.* You must calculate emissions from depressurization using Equation 14 of this section.

$$E = \frac{V}{RT} \times \ln\left(\frac{P_1 - \sum_{j=1}^{m}(P_j)}{P_2 - \sum_{j=1}^{m}(P_j)}\right) \times \sum_{i=1}^{n}(P_i)(MW_i) \qquad \text{(Eq. 14)}$$

Where:

E = Emissions.
V = Free volume in vessel being depressurized.
R = Ideal gas law constant.
T = Temperature of the vessel, absolute.
P_1 = Initial pressure in the vessel.
P_2 = Final pressure in the vessel.
P_j = Partial pressure of the individual condensable compounds (including HAP).
MW_i = Molecular weight of the individual HAP compounds.
n = Number of HAP compounds in the emission stream.
m = Number of condensable compounds (including HAP) in the emission stream.
i = Identifier for a HAP compound.
j = Identifier for a condensable compound.
ln = Natural logarithm.

(e) *Vacuum systems.* You must calculate emissions from vacuum systems using Equation 15 of this section if the air leakage rate is known or can be approximated. The receiving vessel is part of the vacuum system for purposes of this subpart.

$$E = \frac{(La)(t)}{MW_{nc}} \left(\frac{\sum_{i=1}^{n} P_i MW_i}{P_T - \sum_{j=1}^{m} (P_j)} \right) \qquad \text{(Eq. 15)}$$

Where:

E = Mass of HAP emitted.
P_T = Absolute pressure of receiving vessel or ejector outlet conditions, if there is no receiver.
P_i = Partial pressure of the HAP at the receiver temperature or the ejector outlet conditions.
P_j = Partial pressure of condensable (including HAP) at the receiver temperature or the ejector outlet conditions.
La = Total air leak rate in the system, mass/time.
MW_{nc} = Molecular weight of noncondensable gas.
t = Time of vacuum operation.
MW_i = Molecular weight of the individual HAP in the emission stream, with HAP partial pressures calculated at the temperature of the receiver or ejector outlet, as appropriate.

(f) *Gas evolution.* You must calculate emissions from gas evolution using Equation 15 in paragraph (e) of this section with mass flow rate of gas evolution, Wg, substituted for La.

(g) *Air drying.* You must calculate emissions from air drying using Equation 16 of this section:

$$E = B \times \left(\frac{PS_1}{100 - PS_1} - \frac{PS_2}{100 - PS_2} \right) \qquad \text{(Eq. 16)}$$

Where:

E = Mass of HAP emitted.
B = Mass of dry solids.
PS_1 = HAP in material entering dryer, weight percent.
PS_2 = HAP in material exiting dryer, weight percent.

(h) *Empty vessel purging.* You must calculate emissions from empty vessel purging using Equation 17 of this section (*Note:* The term $e^{-Ft/v}$ can be assumed to be 0):

$$E = \left(\frac{V}{RT} \times \left[\sum_{i=1}^{n} (P_i)(MW_i) \right] (1 - e^{-Ft/v}) \right) \qquad \text{(Eq. 17)}$$

Where:

V = Volume of empty vessel.
R = Ideal gas law constant.
T = Temperature of the vessel vapor space; absolute.
P_i = Partial pressure of the individual HAP at the beginning of the purge.
MW_i = Molecular weight of the individual HAP.
F = Flow rate of the purge gas.
t = Duration of the purge.
n = Number of HAP compounds in the emission stream.
i = Identifier for a HAP compound.

(i) *Engineering assessments.* You must conduct an engineering assessment to calculate HAP emissions for each batch emission episode that is not due to vapor displacement, partially filled vessel purging, heating, depressurization, vacuum operations, gas evolution, air drying, or empty vessel purging. An engineering assessment may also be used to support a finding that the emissions estimation equations in this section are inappropriate. All data, assumptions, and procedures used in the engineering assessment must be documented, are subject to preapproval by the Administrator, and must be reported in the batch precompliance report. An engineering assessment may include, but is not limited to, the items listed in paragraphs (i)(1) through (4) of this section.

(1) Previous test results provided the tests are representative of current operating practices at the process unit.

(2) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(3) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(4) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties.

Examples of analytical methods include, but are not limited to the following:

(i) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations.

(ii) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities.

(iii) Estimation of HAP concentrations based on saturation conditions.

§ 63.11955 What are my initial and continuous compliance requirements for other emission sources?

(a) For each process component (including pre-polymerization reactors used in the manufacture of bulk resins) that contains a gas, vapor, liquid, or solid material containing HAP, except for the process components specified in paragraphs (a)(1) through (3) of this section, before opening the process component for any reason, the quantity of total HAP is to be reduced to an amount that occupies a volume of no more than 2.0 percent of the component's containment volume or 25 gallons, whichever is larger, at standard temperature and pressure.

(1) Process components that, during opening, are vented to a closed vent system and control device meeting the requirements in §§ 63.11925 through 63.11950.

(2) Pressure relief devices meeting the requirements in § 63.11915(c).

(3) Process vent bypasses meeting the requirements specified in § 63.11930(c).

(b) Before opening a polymerization reactor for any reason, the quantity of vinyl chloride is not to exceed 0.04 pounds per ton of PVC product, with the product determined on a dry solids basis.

(c) Any gas or vapor HAP removed from a process component in accordance with paragraphs (a)(2) and (3) of this section is to be vented to a closed vent system and control device meeting the requirements in § 63.11925.

§ 63.11956 What are my compliance requirements for ambient monitoring?

You must operate a reliable and accurate vinyl chloride monitoring system for detection of major leaks and identification of the general area of the affected source where a leak is located. A vinyl chloride monitoring system means a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if you assume that all hydrocarbons measured are vinyl chloride, analyzes the samples with infrared spectrophotometry, flame ion detection, or an equivalent or alternative method. You must operate the vinyl chloride monitoring system according to a program that you develop for your affected source. You must submit a description of the program to the Administrator within 45 days of your compliance date, unless a waiver of compliance is granted by the Administrator, or the program has been approved and the Administrator does not request a review of the program. Approval of a program will be granted by the Administrator provided the Administrator finds:

(a) The location and number of points to be monitored and the frequency of monitoring provided for in the program are acceptable when they are compared with the number of pieces of equipment in vinyl chloride service and size and physical layout of the affected source.

(b) It contains a definition of leak which is acceptable when compared with the background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system. Measurements of background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system are to be included with the description of the program. The definition of leak for a given plant may vary among the different areas within the plant and is also to change over time as background concentrations in the plant are reduced.

(c) It contains an acceptable plan of action to be taken when a leak is detected.

(d) It provides for an acceptable calibration and maintenance schedule for the vinyl chloride monitoring system and portable hydrocarbon detector. For the vinyl chloride monitoring system, a daily span check is to be conducted with a concentration of vinyl chloride equal to the concentration defined as a leak according to paragraph (b) of this section. The calibration is to be done with either:

(1) A calibration gas mixture prepared from the gases specified in sections 7.2.1 and 7.2.2 of Method 106 and in accordance with section 10.1 of Method 106, or

(2) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than ±5 percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Sections 8.1 and 9.2 of Method 106. The requirements in Sections 7.2.3.1 and 7.2.3.2 of Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

§ 63.11960 What are my initial and continuous compliance requirements for stripped resin?

(a) *Emission limits.* You must meet the applicable vinyl chloride and total HAP emission limits for stripped resin specified in Table 1 or 2 to this subpart.

(b) *Demonstration of initial compliance.* For each stripped resin stream specified in paragraph (a) of this section, you must meet the requirements in paragraphs (b)(1) through (6) of this section to demonstrate initial compliance. You must demonstrate compliance for each resin stripper or for each group of resin strippers used to process the same type of resin.

(1) For each resin stripper required to meet the emission limit for stripped resin in Table 1 or 2 to this section, you must prepare the site-specific monitoring plan specified in § 63.11935(c)(1) for CPMS. You must install, operate, and maintain CPMS meeting the requirements of § 63.11935(c) and capable of continuously monitoring the parameters specified in paragraph (c)(1) of this section. You must conduct an initial site-specific performance evaluation test of each CPMS according to your site-specific monitoring plan.

(2) You must conduct an initial performance test for the resin stripper, measuring the concentration of vinyl chloride in the stripped resin at the outlet of each resin stripper as specified in paragraphs (b)(2)(i) through (iv) of this section.

(i) Use the test method(s) and procedures specified in paragraph (d) of this section.

(ii) Collect samples on a day when the PVCPU (or collection of PVCPUs, as applicable, if demonstrating compliance with a group of strippers) is producing the resin grade of which you manufacture the most, based on total mass of resin produced in the month preceding the sampling event.

(iii) For continuous processes, collect 1 grab sample for each 8 hours or per grade of PVC produced, whichever is more frequent, during a 24-hour sampling period.

(iv) For batch processes, collect 1 grab sample for each batch during a 24-hour sampling period. Sampling must be completed immediately after stripping.

(3) Demonstrate initial compliance with the vinyl chloride emission limit in Table 1 or 2 to this subpart as specified in paragraphs (b)(3)(i) and (ii) of this section.

(i) Calculate the 24-hour arithmetic average vinyl chloride concentration for each stripper for each resin grade produced during the 24-hour sampling period, using the vinyl chloride concentrations measured for the grab samples collected as specified in paragraph (b)(2)(iii) or (iv) of this section.

(ii) Demonstrate compliance with the vinyl chloride emission limit in Table 1 or 2 to this subpart based on the 24-hour arithmetic average concentration calculated in either paragraph (b)(3)(ii)(A) or (B) of this section.

(A) If more than one resin grade was produced during the 24-hour sampling period, calculate the 24-hour weighted arithmetic average vinyl chloride concentration for each stripper, or for each group of strippers used to process the same type of resin, using the 24-hour average vinyl chloride concentrations calculated in paragraph (b)(3)(i) of this section and the mass of each resin grade produced during the 24-hour sampling period.

(B) If only one resin grade was produced during the 24-hour sampling event, use the 24-hour arithmetic average vinyl chloride concentration for the one resin grade in paragraph (b)(3)(i) of this section for each stripper or calculate the 24-hour arithmetic average vinyl chloride concentration for all strippers used to process the one grade of resin.

(4) You must measure the concentration of total HAP in the stripped resin at the outlet of the resin stripper as specified in paragraphs (b)(4)(i) through (iv) of this section.

(i) Use the test method(s) and procedures specified in paragraph (d) of this section.

(ii) Collect samples on a day when the PVCPU (or collection of PVCPUs, as applicable, if demonstrating compliance with a group of strippers) is producing the resin grade of which you manufacture the most, based on total mass of resin produced in the month preceding the sampling event.

(iii) For continuous processes, you must collect 1 grab sample for each 8 hours or per grade of PVC produced, whichever is more frequent, during a 24-hour sampling period.

(iv) For batch processes, you must collect 1 grab sample for each batch during a 24-hour sampling period. Sampling must be completed immediately after stripping.

(5) Demonstrate initial compliance with the total HAP emission limit for stripped resin in Table 1 or 2 to this subpart as specified in paragraphs (b)(5)(i) and (ii) of this section.

(i) Calculate the 24-hour arithmetic average total HAP concentration for each stripper for each resin grade produced during the 24-hour sampling period, using the individual HAP concentrations measured for the grab samples collected in paragraph (b)(4)(iii) or (iv) of this section and the calculation procedures specified in paragraph (e) of this section.

(ii) Demonstrate compliance with the total HAP emission limit for stripped resin in Table 1 or 2 to this subpart based on each 24-hour arithmetic average concentration calculated in either paragraph (b)(5)(ii)(A) or (B) of this section.

(A) If more than one resin grade was produced during the 24-hour sampling period, calculate the 24-hour weighted arithmetic average total HAP concentration for each stripper, or for each group of strippers used to process the same type of resin, using the 24-hour average total HAP concentrations calculated in paragraph (b)(5)(i) of this section and the mass of each resin grade produced during the 24-hour sampling period.

(B) If only one resin grade was produced during the 24-hour sampling event, use the 24-hour arithmetic average total HAP concentration for the one resin grade in paragraph (b)(5)(i) of this section for each stripper or calculate the 24-hour arithmetic average vinyl chloride concentration for all strippers used to process the one grade of resin.

(6) During the initial vinyl chloride and total HAP performance tests specified in paragraphs (b)(2) and (4) of this section, you must collect the CPMS data specified in paragraph (b)(1) of this section. Using this CPMS data, you must establish an operating limit according to the procedures specified in § 63.11935(d) for each applicable operating parameter specified in paragraphs (c)(1)(i) through (iv) of this section. Each operating limit must be based on the data averaging period for compliance specified in Table 6 to this subpart using data collected at the minimum frequency specified in §§ 63.11935(c)(2) and 63.11890(c), and calculated using the data reduction method specified in § 63.11935(e). For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging period specified in Table 6 to this subpart.

(c) *Demonstration of continuous compliance.* For each stripped resin stream specified in paragraph (a) of this section, you must meet the requirements in paragraphs (c)(1) through (6) of this section to demonstrate continuous compliance. Compliance must be demonstrated for each resin stripper or for each group of resin strippers used to process the same type of resin.

(1) For each resin stripper required to meet the emission limit for stripper resin in Table 1 or 2 to this section, you must operate and maintain CPMS meeting the requirements of § 63.11935(c) and capable of continuously recording the operating parameters specified in paragraphs (c)(1)(i) through (iv) of this section, as applicable. You must conduct periodic site-specific CPMS performance evaluation tests according to your site-specific monitoring plan and § 63.11935(c).

(i) For each resin steam stripper, you must monitor the ratio of steam feed rate to the flow rate of the resin entering the stripper and the temperature of the stripped resin exiting the stripper before any cooling process. The ratio of steam feed rate to entering resin flow rate is calculated by dividing the steam feed rate by the resin flow rate.

(ii) For each resin vacuum stripper, you must monitor the vacuum level maintained in the column, the maximum flow rate of the resin entering the stripper, and the temperature of the stripped resin exiting the stripper before any cooling process. If steam is used, you must monitor the ratio of steam feed rate to the flow rate of the resin entering the resin stripper instead of the maximum flow rate of the resin entering the resin stripper. The ratio of steam feed rate to entering resin flow rate is calculated by dividing the steam feed rate by the resin flow rate.

(iii) If you are using process components other than a steam or vacuum stripper to meet a vinyl chloride or total HAP level specified for stripped resin in Table 1 or 2 to this subpart, you must request approval to use an alternative process component by submitting to the Administrator the information specified in paragraphs (c)(1)(iii)(A) through (C) of this section.

(A) A description of the proposed stripping process.

(B) A description of the operating parameter(s) to be monitored to ensure the stripping process is operated in conformance with its design and achieves the performance level as specified in Table 1 or 2 to this subpart and an explanation of the criteria used to select the operating parameter(s).

(C) A description of the methods and procedures that will be used to demonstrate that the parameter specified in paragraph (c)(1)(iii)(B) of this section indicates proper operation of the resin stripper, the schedule for this demonstration, and a statement that you will establish an operating limit for the monitored operating parameter as part of the notification of compliance status report specified in § 63.11935(d).

(iv) Alternatives to monitoring requirements.

(A) You may request approval to use alternatives to the continuous operating parameter monitoring listed in paragraphs (c)(1)(i) through (iii) of this section, as specified in § 63.11985(c)(5).

(B) You may request approval to monitor a different operating parameter than those established in paragraphs (c)(1)(i) through (iii) of this section or to set a unique monitoring parameter, as specified in § 63.11985(c)(6).

(C) Until permission to use an alternative operating procedure, method, or operating parameter has been granted by the Administrator, you remain subject to the requirements of this subpart.

(2) You must ensure that each operating parameter monitored in paragraph (c)(1) through (4) of this section for the stripper meets the operating limit established in paragraph (b)(4) of this section. You must continuously determine the average value of each monitored operating parameter based on the data collection and reduction methods specified in § 63.11935(c)(2) and (e), and the applicable data averaging period for resin strippers specified in Table 6 to this subpart for all periods the process is operating. You must follow the data measurement and recording frequencies and data averaging periods specified in Table 6 to this subpart. For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging periods specified in Table 6 to this subpart.

(3) On a daily basis, you must measure the concentration of vinyl chloride in the stripped resin at the outlet of the resin stripper for continuous processes, or immediately after stripping for batch processes, using the test method(s) and procedures specified in paragraph (d) of this section, and the procedures specified in paragraphs (b)(2)(iii) and (iv) of this section.

(4) You must demonstrate continuous compliance with the vinyl chloride emission limit in Table 1 or 2 to this subpart on a daily basis using the procedures specified for initial compliance in paragraphs (b)(3)(i) and (ii) of this section.

(5) On a monthly basis, you must measure the concentration of total HAP in the stripped resin at the outlet of the resin stripper for continuous processes, or immediately after stripping for batch processes, as specified in paragraphs (b)(4)(i) through (iv) of this section. Individual sampling events may be 3 to 5 weeks apart, but you must conduct a minimum of 12 sampling events per calendar year.

(6) You must demonstrate continuous compliance with the total HAP emission limit for stripped resin in Table 1 or 2 to this subpart as specified in paragraphs (c)(6)(i) through (iii) of this section.

(i) Calculate the 24-hour arithmetic average total HAP concentration for each stripper for each resin grade produced during the 24-hour sampling period, using the individual HAP concentrations measured for the grab samples collected as specified in paragraph (b)(4)(iii) or (iv) of this section and the calculation procedures specified in paragraph (e) of this section.

(ii) In the first 12 months following your demonstration of initial compliance in paragraph (b)(4) and (5) of this section, you must demonstrate continuous compliance with the total HAP emission limit for stripped resin in Table 1 or 2 to this subpart on a monthly basis as specified in paragraph (b)(4) and (5) of this section.

(iii) Beginning 13 months following your initial demonstration of compliance in paragraph (b)(5) of this section, demonstrate continuous compliance with the total HAP emission limit for stripped resin in Table 1 or 2 to this subpart based on a 12-month rolling average concentration, calculated as the average of the 12 most recent 24-hour arithmetic average concentrations in either paragraph (c)(6)(iii)(A) or (B) of this section.

(A) If more than one resin grade was produced during the 24-hour sampling period, calculate the 24-hour weighted arithmetic average total HAP concentration for each stripper, or for each group of strippers used to process the same type of resin, using the 24-hour average total HAP concentrations calculated in paragraph (c)(6)(i) of this section and the mass of each resin grade produced during the 24-hour sampling period.

(B) If only one resin grade was produced during the 24-hour sampling event, use the arithmetic average total HAP concentration for the one resin grade in paragraph (c)(6)(i) of this section for each stripper or calculate the 24-hour arithmetic average vinyl chloride concentration for all strippers used to process the one grade of resin.

(d) *Performance test methods and procedures for determining concentration of vinyl chloride and total HAP.* You must determine the concentration of vinyl chloride and total HAP using the test methods and procedures specified in paragraphs (d)(1) through (5) of this section. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(1) You must conduct performance tests during maximum representative operating conditions for the process and when the resin stripper is operating as close as possible to your operating limits established during the initial performance test, as required in § 63.11935(d)(2), or during a subsequent performance test, as provided in § 63.11935(d)(2). If an operating limit is a range, then you must operate the stripper as close as possible to the maximum or minimum operating limit for the resin stripper, whichever results in higher emissions (*i.e.*, lower emission reduction). If the resin stripper will be operating at several different sets of operating conditions, you must supplement the testing with additional testing, modeling and/or engineering assessments to demonstrate compliance with the operating limit. Alternative operating conditions may be used if specified or approved by the Administrator.

(2) For measuring total HAP, you must propose a method in your test plan prepared in § 63.7(c)(3) and (e)(2)(i) for conducting sampling and analysis using the methods specified in paragraphs (d)(2)(i) and (ii) of this section. You must submit the test plan for approval as specified in § 63.8(d) and (e).

(i) Method 107 at 40 CFR part 61, appendix B, Section 8.0 for sample collection, preservation, storage, and transport.

(ii) Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass spectrometry (GC/MS) in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” Revision 3, February 2007, EPA Publication No. SW–846, Third Edition (incorporated by reference, see § 63.14) for sample analysis.

(3) For measuring vinyl chloride, you must use Method 107 at 40 CFR part 61, appendix B, Section 8.0 for sample collection, preservation, storage, transport, and analysis.

(4) When using the methods in paragraphs (d)(2) and (3) of this section, for sample collection, preservation, transport, and analysis, you must minimize loss of HAP and maintain sample integrity.

(5) For batch process operations, you must obtain samples when the batch process is operating at absolute worst-case conditions or hypothetical worst-case conditions, as specified in § 63.11945(c)(1) and (2), and the stripper is operating at conditions for the monitored operating parameters that achieve normal emission reduction. For combined continuous and batch process operations, you must obtain sample when the batch processes are operating at absolute worst-case conditions and the stripper is operating at conditions for the monitored operating parameters that achieve normal emission reduction.

(e) *Method for calculating total HAP concentration.* For each stripped resin sample measured using the methods specified in paragraph (d) of this section, calculate the sum of the measured individual HAP compound concentrations by using Equation 1 to this section.

$$C_{HAP} = \sum_{i=1}^{n} C_i \qquad \text{(Eq. 1)}$$

Where:

C_{HAP} = Concentration of total HAP compounds in the stripped resin, in parts per million by weight (ppmw).

C_i = Concentration of each individually identified HAP compound in the stripped resin, in ppmw, where a value of zero should be used for any HAP concentration that is below the detection limit.

§ 63.11965 What are my general compliance requirements for wastewater?

(a) *Initial control level determination.* You must meet the control level (*i.e.*, emission limit or standard) specified in Table 3 to this subpart for each wastewater stream. To determine the applicable control level for each wastewater stream, you must follow the procedures in paragraphs (a)(1) and (2) of this section.

(1) You must measure the concentrations of vinyl chloride and total HAP listed in Table 9 to subpart G of this part as specified in paragraphs (a)(1)(i) and (ii) of this section.

(i) You must collect wastewater samples at the location specified in paragraph (a)(1)(i)(A) for vinyl chloride and paragraph (a)(1)(i)(B) for total HAP listed in Table 9 to subpart G of this part.

(A) For vinyl chloride, collect samples at the location that the wastewater stream is generated and prior to the wastewater stream being exposed to the atmosphere, stored, combined with any other liquid stream, treated (*e.g.*, stripping, distillation, thin film evaporating), or discharged to a wastewater treatment plant.

(B) For total HAP listed in Table 9 to subpart G of this part, collect samples at the point of determination, as defined in subpart G of this part.

(ii) You must measure the concentration of vinyl chloride and total HAP (based on the HAP listed in Table 9 to subpart G of this part) using the test methods and procedures specified in § 63.11980(a) and Table 10 to this subpart and the calculation method specified in § 63.11980(b).

(2) You must determine the annual average flow rate as specified in paragraph (d) of this section.

(b) *Requirements for wastewater streams that must be treated to reduce the vinyl chloride concentration.* Each wastewater stream that has a vinyl chloride concentration equal to or greater than 10 parts per million by weight, determined pursuant to paragraph (a)(1) of this section must be treated to reduce the concentration of vinyl chloride at the outlet of the treatment process as specified in Table 3 to this subpart. You must meet the wastewater treatment process requirements of either paragraph (b)(1) or (2) of this section. You must also meet the continuous compliance requirements specified in § 63.11975.

(1) Route wastewater streams through hard piping from the point of generation directly to the treatment process and route the vent stream from the treatment process to a closed vent system and control device meeting the requirements of §§ 63.11925 through 63.11945.

(2) Meet the requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators used to manage the wastewater from the point of generation through the treatment process as specified in §§ 63.133 through 63.137 and all requirements of subpart G of this part referenced therein.

(c) *Requirements for wastewater streams that must be treated to reduce the concentration of the total HAP listed in Table 9 to subpart G of this part.* For each wastewater stream that contains greater than or equal to 1,000 parts per million by weight total HAP in paragraph § 63.11970(a)(2) or § 63.11975(d)(3), and has an annual average flow rate greater than or equal to 10 liters per minute in § 63.11970(a)(2) or § 63.11975(e)(2), as determined pursuant to paragraphs (a)(1) and (a)(2) of this section, you must meet the requirements in paragraphs (c)(1) through (4) of this section.

(1) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators as specified in §§ 63.133 through 63.137.

(2) Comply with the applicable requirements specified in § 63.138 for control of total HAP listed in Table 9 to subpart G of this part. Alternatively, you may elect to comply with the wastewater treatment provisions specified in § 63.132(g).

(3) Comply with the applicable monitoring and inspection requirements specified in § 63.143.

(4) Comply with the applicable reporting and recordkeeping requirements specified in §§ 63.146 and 63.147.

(d) *Determination of the annual average flow rate.* The annual average flow rate for the wastewater stream must be representative of actual or anticipated operation of the PVCPU generating the wastewater over a designated 12-month period. You must consider the total annual wastewater volume generated by the PVCPU. You must use one or more of the procedures specified in paragraphs (d)(1) through (3) of this section to determine the flow rate. Documentation to determine the annual average flow rate is not required for wastewater streams with an annual average flow rate of 10 liters per minute or greater.

(1) *Knowledge of the wastewater.* You may use knowledge of the wastewater stream and/or the process to determine the annual average flow rate. You must use the maximum expected annual average production capacity of the process unit, knowledge of the process, and/or mass balance information to either: estimate directly the annual average wastewater flow rate; or estimate the total annual wastewater volume and then divide the total volume by 525,600 minutes in a year. When knowledge is used to determine the annual average flow rate, you must provide sufficient information to document the flow rate for wastewater streams determined to have an annual average flow rate of less than 10 liters per minute.

(2) *Historical records.* You may use historical records to determine the annual average flow rate. Derive the highest annual average flow rate of wastewater from historical records representing the 5 most recent years of operation, or, if the process unit has been in service for less than 5 years but at least 1 year, from historical records

representing the total operating life of the process unit. When historical records are used to determine the annual average flow rate, you must provide sufficient information to document the flow rate for wastewater streams determined to have an annual average flow rate of less than 10 liters per minute.

(3) *Measurements of flow rate.* You may take measurements to determine the annual average flow rate. If you elect to measure flow rate, you must measure flow rate measurements at or near the point of determination, as defined in subpart G of this part. When measurement data are used to determine the annual average flow rate, you must provide sufficient information to document the flow rate measurements for wastewater streams determined to have an annual average flow rate of less than 10 liters per minute.

§ 63.11970 What are my initial compliance requirements for wastewater?

(a) *Demonstration of initial compliance for wastewater streams that must be treated.* For each wastewater stream that must be treated as specified in § 63.11965(b) and (c), you must meet the requirements in paragraphs (a)(1) through (3) of this section, respectively, to demonstrate initial compliance.

(1) For each wastewater stream that must be treated to reduce the vinyl chloride concentration limit specified in Table 3 to this subpart, and for which you elect to treat the stream according to § 63.11965(b)(1), you must follow the requirements of paragraphs (a)(1)(i) through (iii) of this section.

(i) For each wastewater treatment process, you must prepare the site-specific monitoring plan specified in § 63.11935(c) for CPMS. You must install, operate, and maintain CPMS meeting the requirements of § 63.11935 and capable of continuously monitoring the parameters specified in § 63.11975(a)(1). You must conduct an initial site-specific performance evaluation test of each CPMS according to your site-specific monitoring plan and § 63.11935(c)(2).

(ii) You must conduct an initial performance test for the wastewater treatment process, measuring the concentration of vinyl chloride in the wastewater stream at the outlet of the wastewater treatment process before the wastewater is exposed to the atmosphere and using the test method(s) and procedures specified in § 63.11980(a).

(iii) During the initial performance test conducted as specified in paragraph (a)(1)(ii) of this section, you must use the CPMS data collected pursuant to paragraph (a)(1)(i) of this section to establish an operating limit for the wastewater treatment process according to the procedures specified in § 63.11935(d) for each operating parameter specified in § 63.11975(a)(1). Each operating limit must be based on the data averaging period for the wastewater treatment process specified in Table 6 to this subpart using data collected at the minimum frequency specified in §§ 63.11935(c)(2) and 63.11890(c), and calculated using the data reduction method specified in § 63.11935(e). For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging period specified in Table 6 to this subpart.

(2) For each wastewater stream that must be treated to meet the vinyl chloride emission limit in Table 3 to this subpart, and for which you elect to treat the stream according to § 63.11965(b)(2), you must demonstrate initial compliance as specified in subpart G, as referenced in 63.11965(b)(2).

(3) For each wastewater stream that contains greater than or equal to 1,000 parts per million by weight of total HAP and has an annual average flow rate greater than or equal to 10 liters per minute, determined using the procedures and methods specified in § 63.11965(a)(1) and (2) respectively, you must demonstrate initial compliance as specified in subpart G, as referenced in § 63.11965(c).

(b) *Demonstration of initial compliance for wastewater streams that are not required to be treated for vinyl chloride.* For each wastewater stream that has a vinyl chloride concentration less than 10 parts per million by weight, you must use the measurement specified in § 63.11965(a)(1) to demonstrate initial compliance.

(c) *Demonstration of initial compliance for wastewater streams that are not required to be treated for total HAP.* You must follow the procedure in either paragraph (c)(1) or (2) of this section to demonstrate initial compliance.

(1) For each wastewater stream that has a total HAP concentration of less than 1,000 parts per million by weight, you must use the measurement in § 63.11965(a)(1)(i)(B) to demonstrate compliance.

(2) For each wastewater stream that has an annual average flow rate of less than 10 liters per minute, you must use the flow rate initially determined as specified in § 63.11965(a)(2).

§ 63.11975 What are my continuous compliance requirements for wastewater?

For each wastewater stream that must be treated to reduce the concentration of vinyl chloride as specified in § 63.11965(b)(1), you must demonstrate continuous compliance as specified in either paragraph (a) or (b) of this section. For each wastewater stream for which you initially determine in § 63.11970(c) that treatment is not required to reduce total HAP concentration, you must demonstrate continuous compliance as specified in paragraph (e) of this section. For each wastewater stream that must be treated to reduce the concentration of total HAP as specified in § 63.11965(c), you must demonstrate continuous compliance as specified in paragraph (c) of this section. For each wastewater stream for which you initially determine in § 63.11970(b) that treatment is not required to reduce the vinyl chloride concentration, you must demonstrate continuous compliance as specified in paragraph (d) of this section.

(a) For each wastewater stream that must be treated to reduce the concentration of vinyl chloride, and for which you elect to treat the stream according to § 63.11965(b)(1), you must demonstrate continuous compliance as specified in paragraphs (a)(1) through (3) of this section.

(1) For each wastewater treatment process, you must operate and maintain CPMS meeting the requirements of § 63.11935(c) and capable of continuously recording the parameters specified in paragraphs (a)(1)(i) through (iv) of this section, as applicable. You must conduct periodic site-specific CPMS performance evaluation tests according to your site-specific monitoring plan and § 63.11935(c).

(i) For wastewater steam strippers, you must monitor the ratio of steam feed rate into the stripper to wastewater stream flow rate into the stripper and the temperature of the wastewater exiting the stripper before any cooling process. The steam feed to wastewater flow ratio is calculated by dividing the steam feed rate by the wastewater stream flow rate. You must follow the data measurement and recording frequencies and data averaging periods specified in Table 6 to this subpart.

(ii) For wastewater vacuum strippers, you must monitor the vacuum level maintained in the column, the maximum flow rate of the wastewater stream, and the temperature of the wastewater exiting the stripper before any cooling process. If steam is used, you must monitor the ratio of steam feed rate into the stripper to wastewater stream flow rate into the stripper instead of monitoring the flow rate of the wastewater stream. The steam feed to wastewater flow ratio is calculated by dividing the steam feed rate by the wastewater stream flow rate. You must follow the data measurement and recording frequencies and data averaging periods specified in Table 6 to this subpart.

(iii) If you are using a wastewater treatment process other than a steam or vacuum stripper, you must submit the information specified in paragraphs (a)(1)(iii)(A) through (C) of this section.

(A) A description of the proposed treatment process.

(B) A description of the parameter(s) to be monitored to ensure that the treatment process is operated in conformance with its design and that it achieves the emission standard specified in Table 3 to this subpart, and an explanation of the criteria used to select the parameter(s).

(C) A description of the methods and procedures that will be used to demonstrate that the parameter specified in paragraph (a)(1)(iii)(B) of this section indicates proper operation of the treatment process, the schedule for this demonstration, and a statement that you will establish an operating limit for the monitored operating parameter as part of the notification of compliance status report specified in § 63.11935(d).

(iv) Alternatives to monitoring requirements.

(A) You may request approval to use alternatives to the continuous operating parameter monitoring listed in paragraphs (a)(1)(i) through (iii) of this section, as specified in § 63.11985(c)(5).

(B) You may request approval to monitor a different parameter than those established in paragraphs (a)(1)(i) through (iii) of this section or to set unique monitoring parameter, as specified in § 63.11985(c)(6).

(C) Until permission to use an alternative monitoring procedure, method, or parameter has been granted by the Administrator, you remain subject to the requirements of this subpart.

(2) You must ensure that each operating parameter monitored in paragraph (a)(1) of this section for a treatment process meets the operating limit established in § 63.11970(a)(1)(iii). You must continuously determine the average value of each monitored operating parameter based on the data collection and reduction methods specified in § 63.11935(c)(2) and (e), and the applicable data averaging period for the wastewater treatment process specified in Table 6 to this subpart for all periods the process is operating. You must follow the data measurement and recording frequencies and data averaging periods specified in Table 6 to this subpart. For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging periods specified in Table 6 to this subpart.

(3) To demonstrate compliance with the emission limit for vinyl chloride specified in Table 3 to this subpart, you must follow the procedures specified in paragraphs (a)(3)(i) through (iii) of this section.

(i) Take monthly measurements of the vinyl chloride concentration using the procedures and methods for vinyl chloride specified in § 63.11965(a)(1).

(ii) In the first 12 months following your demonstration of initial compliance in § 63.11970(a)(1), you must demonstrate continuous compliance with the vinyl chloride emission limit in Table 3 to this subpart on a monthly basis, using the monthly concentration measurement specified in paragraph (a)(3)(i) of this section.

(iii) Beginning 13 months following your initial demonstration of compliance in § 63.11970(a)(1), demonstrate continuous compliance with the vinyl chloride emission limit in Table 3 to this subpart on a monthly basis, using a 12-month rolling average concentration, calculated as the average of the 12 most recent monthly concentration measurements specified in paragraph (a)(3)(i) of this section.

(b) For each wastewater stream that must be treated to reduce the concentration of vinyl chloride, and for which you elect to treat the stream according to § 63.11965(b)(2), you must demonstrate continuous compliance as specified in subpart G of this part, as referenced in § 63.11965(b)(2).

(c) For each wastewater stream that must be treated to reduce the concentration of total HAP as specified in § 63.11965(c), you must demonstrate continuous compliance as specified in subpart G of this part, as referenced in § 63.11965(c).

(d) For each wastewater stream for which you initially demonstrate in § 63.11970(b) that treatment is not required to reduce the vinyl chloride concentration, you must demonstrate continuous compliance as specified in paragraphs (d)(1) through (4) of this section.

(1) Conduct monthly performance tests, measuring the vinyl chloride concentration using the procedures and methods for vinyl chloride specified in § 63.11965(a)(1).

(2) In the first 12 months following your demonstration of initial compliance in § 63.11970(b), you must demonstrate continuous compliance with the vinyl chloride emission limit in Table 3 to this subpart on a monthly basis, using the monthly concentration measurement specified in paragraph (d)(1) of this section.

(3) Beginning 13 months following your initial demonstration of compliance in § 63.11970(b), demonstrate continuous compliance with the vinyl chloride emission limit in Table 3 to this subpart on a monthly basis, using a 12-month rolling average concentration, calculated as the average of the 12 most recent monthly concentration measurements specified in paragraph (d)(1) of this section.

(4) If any monthly performance test specified in paragraph (d)(2) or (3) of this section shows that the concentration of vinyl chloride in the wastewater stream is greater than or equal to the vinyl chloride emission limit in Table 3 to this subpart, then you must use a treatment process to reduce the vinyl chloride concentration as specified in § 63.11965(b) and you must demonstrate compliance as specified in paragraph (a) of this section.

(e) For each wastewater stream for which you initially demonstrate in § 63.11970(c) that treatment is not required to reduce the total HAP concentration, you must conduct monthly performance tests, following the procedure specified in paragraph (e)(1) or (2) of this section on a monthly basis.

(1) Sample and measure the concentration of total HAP using the procedures and methods for total HAP specified in § 63.11965(a)(1) and demonstrate that the total HAP concentration (based on the HAP listed in Table 9 to subpart G of this part) is less than 1,000 parts per million by weight. The data-averaging period for demonstrating compliance is specified in subpart G of this part.

(2) Re-establish that the annual average flow rate of the stream is less than 10 liters per minute, using the procedure and methods specified in § 63.11965(a)(2).

(3) If any monthly performance test specified in paragraph (e)(1) of this section shows that the concentration of total HAP is greater than or equal to 1,000 parts per million by weight and the annual average flow rate measured in paragraph (e)(2) of this section is greater than or equal to 10 liters per minute, then you must use a treatment process to reduce the vinyl chloride concentration as specified in § 63.11965(c) and you must demonstrate compliance as specified in paragraph (b) of this section.

§ 63.11980 What are my test methods and calculation procedures for wastewater?

(a) *Performance test methods and procedures.* You must determine the concentration of vinyl chloride and total HAP (based on the list of HAP in Table 9 to subpart G of this part) using the test methods and procedures specified in paragraphs (a)(1) through (5) of this section. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(1) You must conduct performance tests during maximum representative operating conditions for the process and when the wastewater treatment process is operating as close as possible to your operating limits established during the performance test conducted to demonstrate initial compliance, as required in § 63.11970, or during a subsequent performance test conducted to demonstrate continuous compliance, as provided in § 63.11975. If an operating limit is a range, then you must operate the wastewater treatment process as close as possible to the maximum or minimum operating limit, whichever results in higher emissions (*i.e.,* lower emission reduction). If the wastewater treatment process will be operating at several different sets of operating conditions, you must supplement the testing with additional testing, modeling and/or engineering assessments to demonstrate compliance with the operating limit. Alternative operating conditions may be used if specified or approved by the Administrator as specified in 63.11940(j).

(2) For measuring total HAP, you must propose a method in your test plan prepared in § 63.7(c)(3) and (e)(2)(i) for conducting sampling and analysis using the methods specified in paragraphs (a)(2)(i) through (iii) of this section. You must submit the test plan for approval as specified in § 63.8(d) and (e).

(i) Using Method 107 at 40 CFR part 61, appendix B, Section 8.0 for sample collection, preservation, storage, and transport.

(ii) For sample analysis for total HAP except methanol, using Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass spectrometry (GC/MS) in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” Revision 3, February 2007, EPA Publication No. SW–846, Third Edition (incorporated by reference, see § 63.14) for sample analysis.

(iii) For sample analysis for methanol, using Method 305 at 40 CFR 63, appendix A, Sections 6.0 and 7.0.

(3) For measuring vinyl chloride, you must use Method 107 at 40 CFR part 61, appendix B, Section 8.0 for sample collection, preservation, storage, transport, and analysis.

(4) When using the test methods in paragraph (a)(2) or (3) of this section, you must meet the requirements in paragraphs (a)(4)(i) through (iii) of this section.

(i) Sample collection may consist of grab or composite samples.

(ii) Samples must be taken before the wastewater stream is exposed to the atmosphere.

(iii) You must ensure that sample collection, preservation, transport, and analysis minimizes loss of HAP and maintains sample integrity.

(5) For batch process operations, you must obtain samples when the batch process is operating at absolute worst-case conditions or hypothetical worst-case conditions, as defined for process vents in § 63.11945(c)(1) and (2), and the wastewater treatment process is operating at conditions specified in paragraph (a)(1) of this section. For combined continuous and batch process operations, you must obtain sample when the batch processes are operating at absolute worst-case conditions and the wastewater treatment process is operating at conditions for the monitored operating parameters that achieve normal emission reduction.

(b) *Method for calculating total HAP concentration.* For each wastewater stream measured using the methods specified in paragraph (a) of this section, calculate the sum of the measured concentrations of individual HAP listed in Table 9 to subpart G of this part by using Equation 1 to this section.

$$C_{T9} = \sum_{i=1}^{n} C_i \quad \text{(Eq. 1)}$$

Where:

C_{T9} = Concentration of total HAP that are listed in Table 9 to subpart G of this part, in the stream, in parts per million by weight (ppmw).
C_i = Concentration of each individually identified HAP that is listed in Table 9 to subpart G of this part, in ppmw.

Notifications, Reports, and Records

§ 63.11985 What notifications and reports must I submit and when?

In addition to the notifications and reports required in subpart A of this part, as specified in Table 5 to this subpart, you must submit the additional information and reports specified in paragraphs (a) through (c) of this section, as applicable.

(a) *Notification of compliance status.* When submitting the notification of compliance status required in § 63.9(h), you must also include the information specified in paragraphs (a)(1) through (9) of this section, as applicable.

(1) You must include an identification of the storage vessels subject to this subpart, including the capacity and liquid stored for each vessel. You must submit the information specified in paragraph (a)(2) of this section for each pressure vessel.

(2) You must include the information specified in § 63.1039(a) for equipment leaks.

(3) You must include an identification of the heat exchange systems that are subject to the requirements of this subpart.

(4) You must include the operating limit for each monitoring parameter identified for each control device, resin stripper, and wastewater treatment process used to meet the emission limits in Table 1, 2 or 3 to this subpart, as determined pursuant to § 63.11935(d). This report must include the information in § 63.11935(d), as applicable.

(5) You must include the records specified in paragraphs (d)(5)(i) through (iv) of this section, as applicable, for process vents.

(i) You must include the performance test records specified in § 63.11990(f)(1), as applicable. These reports must include one complete test report for each test method used for each process vent. A complete test report must include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in applicable sections of this subpart must be submitted, but a complete test report is not required.

(ii) You must include the information specified in paragraphs (a)(5)(ii)(A) through (C) of this section for batch process vent operations.

(A) Descriptions of worst-case operating and/or testing conditions for control devices including results of emissions profiles.

(B) Calculations used to demonstrate initial compliance according to §§ 63.11945 and 63.11950, including documentation of the proper operation of a process condenser(s) as specified in § 63.11950(c)(2)(ii).

(C) Data and rationale used to support an engineering assessment to calculate emissions in accordance with § 63.11950(i).

(iii) If you use a fabric filter, you must include the fabric filter operation and maintenance plan as specified in § 63.11940(h)(10). You must submit analyses and supporting documentation demonstrating conformance with Fabric Filter Bag Leak Detection Guidance, EPA–454/R–98–015, September 1997 (incorporated by reference, see § 63.14) and specifications for bag leak detection systems as part of the notification of compliance status report.

(iv) If you use a control device other than those listed in § 63.11940 for your process vent, you must include a description of the parameters to be monitored to ensure the control device is operated in conformance with its design and achieves the specified emission limitation and an explanation of the criteria used to select the parameter; and a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that you will establish an operating limit for the monitored parameter as specified in paragraph (a)(4) of this section.

(6) [Reserved]

(7) You must include the records specified in paragraphs (a)(7)(i) through (iii) of this section, as applicable, for resin strippers.

(i) You must include an identification of each resin stripper and resin type subject to the requirements of this subpart.

(ii) You must include results of the initial testing used to determine the annual average concentration of vinyl chloride and the annual average flow rate and concentration of total HAP that are listed in Table 9 to subpart G of this part.

(iii) You must record the approved test method specified in § 63.11980(a) for sample introduction, instrument calibration and sample analysis for the laboratory determination of vinyl chloride and the laboratory determination of total HAP that are listed in Table 9 to subpart G of this part.

(8) You must include the records specified in paragraphs (a)(8)(i) through (vi) of this section, as applicable, for wastewater.

(i) You must include an identification of each wastewater stream subject to the requirements of this subpart, and the control level required. You must also include a description of the treatment process to be used for each wastewater stream.

(ii) You must include results of the initial sampling used to determine the annual average concentration of vinyl chloride and the annual average concentration of total HAP that are listed in Table 9 to subpart G of this part.

(iii) You must include the annual average flow rate calculated using the procedures in § 63.11965(d) for each wastewater stream that you have determined is not subject to treatment as specified in § 63.11970(b) because it has an annual average flow rate of less than 10 liters per minute.

(iv) You must record the test method specified in § 63.11980(a)(2) for sample introduction, instrument calibration and sample analysis for the laboratory determination of vinyl chloride and laboratory determination of total HAP that are listed in Table 9 to subpart G of this part.

(v) You must include any other applicable information that is required by the reporting requirements specified in § 63.146 of subpart G.

(vi) If you use a wastewater treatment process other than a steam or vacuum stripper for wastewater, you must include a description of the parameters to be monitored to ensure the control measure is operated in conformance with its design and achieves the specified emission limitation and an explanation of the criteria used to select the parameter; and a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that you will establish an operating limit for the monitored parameter as specified in paragraph (a)(4) of this section.

(9) You must include a certification of compliance, signed by a responsible official, as applicable that states the following:

(i) "This facility complies with the requirements in this subpart for storage vessels."

(ii) "This facility complies with the requirements in this subpart for equipment leaks."

(iii) "This facility complies with the requirements in this subpart for heat exchange systems."

(iv) "This facility complies with the requirements in this subpart for HAP emissions from process vents."

(v) "This facility complies with the requirements in this subpart for other emission sources."

(vi) "This facility complies with the requirements in this subpart for the stripped resin."

(vii) "This facility complies with the requirements in this subpart for wastewater."

(b) *Compliance reports.* When submitting the excess emissions and continuous monitoring system performance report and summary report required in § 63.10(e)(3), you must also include the information specified in paragraphs (b)(1) through (10) of this section, as applicable. This report is referred to in this subpart as your compliance report.

(1) You must include a copy of the inspection record specified in § 63.11990(b)(2) for each storage vessel when a defect, failure, or leak is detected. You must also include a copy of the applicable information specified in § 63.1039(b)(5) through (8) of subpart UU of this part for each pressure vessel.

(2) You must include the information specified in § 63.1039(b) for equipment leaks, except for releases from pressure relief devices. For any releases from pressure relief devices, you must submit the report specified in paragraph (c)(8) of this section instead of the information specified in § 63.1039(b)(1) through (3) of subpart UU of this part.

(3) You must include the information specified in paragraphs (b)(3)(i) through (vi) of this section for heat exchange systems.

(i) The number of heat exchangers.

(ii) The number of heat exchangers found to be leaking.

(iii) A summary of the monitoring data used to indicate a leak, including the number of leaks determined to be equal to or greater than the leak definition.

(iv) If applicable, the date a leak was identified, the date the source of the leak was identified, and the date of repair.

(v) If applicable, a summary of each delayed repair, including the original date and reason for the delay and the date of repair, if repaired during the reporting period.

(vi) If applicable, an estimate of total strippable volatile organic compounds emissions for each delayed repair over the reporting period.

(4) You must include the records specified in paragraphs (b)(4)(i) through (iii) of this section, as applicable, for process vents, resin strippers, and wastewater.

(i) *Deviations using CEMS or CPMS.* For each deviation from an emission limit or operating limit where a CEMS or CPMS is being used to comply with an emission limit in this rule, you must include the information in paragraphs (b)(4)(i)(A) through (E) of this section.

(A) For CEMS, the 3-hour block average value calculated for any period when the value is higher than an emission limit in Table 1 or 2 to this subpart or when the value does not meet the data availability requirements defined in § 63.11890(c).

(B) For CPMS, the average value calculated for any day (based on the data averaging periods for compliance specified in Table 6 to this subpart) that does not meet your operating limit established according to § 63.11935(d) or that does not meet the data availability requirements specified in § 63.11890(c).

(C) The cause for the calculated emission level or operating parameter level do not meet the established emission limit or operating limit.

(D) For deviations caused by lack of monitoring data, the duration of periods when monitoring data were not collected.

(E) Operating logs of batch process operations for each day during which the deviation occurred, including a description of the operating scenario(s) during the deviation.

(ii) *New operating scenario.* Include each new operating scenario that has been operated since the time period covered by the last compliance report and has not been submitted in the notification of compliance status report or a previous compliance report. For each new operating scenario, you must provide verification that the operating conditions for any associated control or treatment device have not been exceeded and constitute proper operation for the new operating scenario. You must provide any required calculations and engineering analyses that have been performed for the new operating scenario. For the purposes of this paragraph (b)(4)(ii), a revised operating scenario for an existing process is considered to be a new operating scenario when one or more of the data elements listed in § 63.11990(e)(4) have changed.

(iii) *Process changes.* You must document process changes, or changes made to any of the information submitted in the notification of compliance status report or a previous compliance report, that is not within the scope of an existing operating scenario, in the compliance report. The notification must include all of the information in paragraphs (b)(4)(iii)(A) through (C) of this section.

(A) A description of the process change.

(B) Revisions to any of the information reported in the original notification of compliance status report as provided in paragraph (a) of this section.

(C) Information required by the notification of compliance status report, as provided in paragraph (a) of this section, for changes involving the addition of processes or equipment at the affected source.

(5) You must submit the applicable information specified in paragraphs (b)(5)(i) through (iv) of this section for process vents.

(i) For catalytic incinerators for which you have selected the alternative monitoring specified in § 63.11940(b)(3), results of the annual catalyst sampling and inspections required by § 63.11940(b)(3)(i) and (ii) including any subsequent corrective actions taken.

(ii) For regenerative adsorbers, results of the adsorber bed outlet volatile organic compounds concentration measurements specified in § 63.11940(d)(7).

(iii) For non-regenerative adsorbers, results of the adsorber bed outlet volatile organic compounds concentration measurements specified in § 63.11940(e)(2).

(iv) *Other control device reporting provisions.* If you are using a control device other than those listed in this subpart, you must submit the information as specified in paragraphs (b)(5)(iv)(A) through (C) of this section.

(A) A description of the proposed control device.

(B) A description of the parameter(s) to be monitored to ensure the control device is operated in conformance with its design and achieves the performance level as specified in this subpart and an explanation of the criteria used to select the parameter(s).

(C) The frequency and content of monitoring, recording, and reporting if monitoring and recording is not continuous, or if compliance reports, as specified in paragraph (b)(4)(i)(A) of this section, will not contain 3-hour block average values when the monitored parameter value does not meet the established operating limit. The rationale for the proposed monitoring, recording, and reporting system must be included.

(6) You must include the records specified in § 63.11990(j) for other emission sources.

(7) For resin stripper operations, you must include results of monthly concentration measurements for each resin type discharged from the PVCPU that did not meet the control level requirements in Table 1 or 2, as applicable.

(8) You must include the information specified in paragraphs (b)(8)(i) and (ii) of this section for your wastewater streams.

(i) Results of monthly concentration measurements for each wastewater stream discharged from the affected source that did not meet the control level requirements in Table 3 to this subpart.

(ii) If you must comply with § 63.11965, you must include any other applicable information that is required by the reporting requirements specified in § 63.146.

(9) For closed vent systems subject to the requirements of § 63.11930, you must include the information specified in paragraphs (b)(9)(i) through (iv) of this section, as applicable.

(i) As applicable, records as specified in § 63.11930(g)(1)(i) for all times when flow was detected in the bypass line, the vent stream was diverted from the control device, or the flow indicator was not operating.

(ii) As applicable, records as specified in § 63.11930(g)(1)(ii) for all occurrences of all periods when a bypass of the system was indicated (the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has been broken).

(iii) Records of all times when monitoring of the system was not performed as specified in § 63.11930(d) and (e), or repairs were not performed as specified in § 63.11930(f), or records were not kept as specified in § 63.11930(g)(2).

(iv) Records of each time an alarm on a closed vent system operating in vacuum service is triggered as specified in § 63.11930(h) including the cause for the alarm and the corrective action taken.

(10) *Overlap with title V* reports. Information required by this subpart, which is submitted with a title V periodic report, does not need to be included in a subsequent compliance report required by this subpart or subpart referenced by this subpart. The title V report must be referenced in the compliance report required by this subpart.

(c) *Other notifications and reports.* You must submit the other notification and reports, as specified in paragraphs (c)(1) through (10) of this section, as applicable.

(1) *Notification of inspection.* To provide the Administrator the opportunity to have an observer present, you must notify the Administrator at least 30 days before an inspection required by §§ 63.11910 through 63.11920 and § 63.11930. If an inspection is unplanned and you could not have known about the inspection 30 days in advance, then you must notify the Administrator at least 7 days before the inspection. Notification must be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 days before the inspection. If a delegated State or local agency is notified, you are not required to notify the Administrator. A delegated State or local agency may waive the requirement for notification of inspections.

(2) *Batch precompliance report.* You must submit a batch precompliance report at least 6 months prior to the compliance date of this subpart that includes a description of the test conditions, data, calculations, and other information used to establish operating limits according to § 63.11935(d) for all batch operations. If you use an engineering assessment as specified in § 63.11950(i), you must also include data or other information supporting a finding that the emissions estimation equations in § 63.11950(a) through (h) are inappropriate. We will either approve or disapprove the report within 90 days after we receive it. If we disapprove the report, you must still be in compliance with the emission limitations and work practice standards of this subpart by your compliance date. To change any of the information submitted in the report, you must notify us 60 days before you implement the planned change.

(3) *Notification of process change.* If you change or add to your plant site or affected source, as discussed in § 63.11896, you must submit a notification describing the change or addition.

(4) *Affirmative defense notification and report.*

(i) As specified in § 63.11895(b), if your affected source experiences an exceedance of its emission limit(s) during a malfunction, you must notify the Administrator by telephone or facsimile (fax) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction, if you wish to avail yourself of an affirmative defense to civil penalties for that malfunction.

(ii) If you seek to assert an affirmative defense, you must follow the procedures in paragraph (c)(4)(i) of this section and submit a written report as specified in § 63.11895 to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 63.11880 to demonstrate, with all necessary supporting documentation, that you have met the requirements set forth in § 63.11895(a).

(5) *Request for approval to use alternative monitoring methods.* Prior to your initial notification of compliance status, you may submit requests for approval to use alternatives to the continuous operating parameter monitoring specified in this rule, as provided for in §§ 63.11940(j)(1), 63.11960(c)(1)(iv)(A), and 63.11975(a)(1)(iv)(A), following the same procedure as specified in § 63.8. The information specified in paragraphs (c)(5)(i) and (ii) of this section must be included.

(i) A description of the proposed alternative system.

(ii) Information justifying your request for an alternative method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(6) *Request for approval to monitor alternative parameters.* Prior to your initial notification of compliance status, you may submit requests for approval to monitor a different parameter than those established in § 63.11935(d) and as provided for in §§ 63.11940(j)(2), 63.11960(c) (1)(iv)(B), and 63.11975(a)(1)(iv)(B), following the same procedure as specified for alternative monitoring methods in § 63.8. The information specified in paragraphs (c)(6)(i) through (iii) of this section must be included in the request.

(i) A description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit and an explanation of the criteria used to select the parameter(s).

(ii) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that you will establish an operating limit for the monitored parameter(s) as part of the notification of compliance status if required under this subpart, unless this information has already been submitted.

(iii) The frequency and content of monitoring, recording, and reporting, if monitoring and recording is not continuous. The rationale for the proposed monitoring, recording, and reporting system must be included.

(7) [*Reserved*]

(8) *Pressure relief device, closed vent system in vacuum service, bypass deviation, or pressure vessel closure device deviation report.* If any pressure relief device in HAP service or any piece of equipment or closed vent system has discharged to the atmosphere as specified in §§ 63.11910(c)(4), 63.11915(c), 63.11930(c), or 63.11930(h), you must submit to the Administrator within 10 days of the discharge the following information:

(i) The source, nature, and cause of the discharge.

(ii) The date, time, and duration of the discharge.

(iii) An estimate of the quantity of vinyl chloride and total HAP emitted during the discharge and the method used for determining this quantity.

(iv) The actions taken to prevent this discharge.

(v) The measures adopted to prevent future such discharges.

(9) *Commencing and ceasing operation of continuous emissions monitoring systems.* Before starting or stopping the use of CEMS you must notify the Administrator as specified in § 63.11935(b)(7).

(10) *Data Submittal.*

(i) As of January 1, 2012, and within 60 days after the date of completing each performance test (see § 60.8) required by this subpart, you must submit performance test data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert_tool.html*). Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically to EPA's CDX.

(ii) Within 60 days after the date of completing each CEMS performance evaluation test (see § 60.13), you must submit the relative accuracy test audit data electronically into EPA's CDX by using the ERT, as mentioned in paragraph (10)(i) of this section. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically to EPA's CDX.

(iii) All reports required by this subpart not subject to the requirements in paragraphs (c)(10)(i) and (ii) of this section must be sent to the Administrator at the appropriate address listed in § 63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (*e.g.,* by electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraphs (10)(i) and (ii) of this section in paper format.

§ 63.11990 What records must I keep?

You must keep records as specified in paragraphs (a) through (j) of this section, as applicable.

(a) *Copies of reports.* You must keep a copy of each notification and report that you submit to comply with this subpart, including all documentation supporting any notification or report. You must also keep copies of the current versions of the site-specific performance evaluation test plan, site-specific monitoring plan, and the equipment leak detection and repair plan.

(b) *Storage vessels.* For storage vessels, you must maintain the records specified in paragraphs (b)(1) through (5) of this section.

(1) You must keep a record of the dimensions of the storage vessel, an analysis of the capacity of the storage vessel, and an identification of the liquid stored.

(2) Inspection records for fixed roofs complying with § 63.11910 including the information specified in paragraphs (b)(2)(i) and (ii) of this section.

(i) Record the date of each inspection required by § 63.11910(a)(3).

(ii) For each defect detected during an inspection required by § 63.11910(a)(3), record the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with § 63.11910(a)(4)(ii), also record the reason for the delay and the date that completion of repair of the defect is expected.

(3) For degassing and cleaning events, you must maintain the records specified in paragraphs (b)(3)(i) and (ii) of this section.

(i) Keep records of the storage vessel identification and date of each degassing and cleaning event.

(ii) Estimate and keep records of the emissions from each degassing and cleaning event.

(4) For pressure vessels, you must keep the records specified in paragraph (c) of this section for each pressure vessel.

(5) For internal and external floating roof storage vessels, you must maintain the records required in § 63.1065 of subpart WW of this part.

(c) *Equipment leaks.* For equipment leaks, you must maintain the records specified in § 63.1038 of subpart UU of this part for equipment leaks and a record of the information specified in § 63.11930(g)(4) for monitoring instrument calibrations conducted according to § 63.11930(e)(2).

(d) *Heat exchange systems.* For a heat exchange system subject to this subpart, you must keep the records specified in paragraphs (d)(1) through (6) of this section.

(1) Identification of all heat exchangers at the facility and the measured or estimated average annual HAP concentration of process fluid or intervening cooling fluid processed in each heat exchanger.

(2) Identification of all heat exchange systems. For each heat exchange system that is subject to this subpart, you must include identification of all heat exchangers within each heat exchange system, identification of the individual heat exchangers within each heat exchange system, and, for closed-loop recirculation systems, the cooling tower included in each heat exchange system.

(3) Identification of all heat exchange systems that are exempt from the monitoring requirements according to the provisions in § 63.11920(b) and the provision under which the heat exchange system is exempt.

(4) Results of the following monitoring data for each monitoring event.

(i) Date/time of event.

(ii) Heat exchange exit line flow or cooling tower return line flow at the sampling location, gal/min.

(iii) Monitoring method employed.

(iv) If the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference, see § 63.14) is used according to § 63.11920(a)(3)(i) or (h)(4)(i):

(A) Barometric pressure.

(B) El Paso air stripping apparatus water flow (ml/min) and air flow, ml/min, and air temperature, °C.

(C) FID reading (parts per million by volume).

(D) Calibration information identified in Section 5.4.2 of the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference, see § 63.14).

(v) If Method 8021B, "Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors," dated December 1996 (incorporated by reference, see § 63.14) is used according to § 65.610(a)(3)(ii):

(A) The type of detector used.

(B) The list of target analytes.

(C) The measured cooling water concentration for each of target analyte (parts per billion by weight).

(D) Calibration and surrogate recovery information identified in Section 8.0 of Method 8021B, "Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors," dated December 1996 (incorporated by reference, see § 63.14).

(5) The date when a leak was identified and the date when the heat exchanger was repaired or taken out of service.

(6) If a repair is delayed, the reason for the delay, the schedule for completing the repair, and the estimate of potential emissions for the delay of repair.

(e) *Process vents, resin strippers, and wastewater.* You must include the records specified in paragraphs (e)(1) through (4) of this section, as applicable, for process vents, resin strippers, and wastewater.

(1) *Continuous records.* Where this subpart requires a continuous record using CEMS or CPMS, you must maintain, at a minimum, the records specified in § 63.10(b)(2)(vii)(A).

(2) *Excluded data.* In any average computed to determine compliance, you must exclude monitoring data recorded during periods specified in paragraphs (e)(2)(i) through (iii) of this section.

(i) Periods of non-operation of the process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(ii) Periods of no flow to a control device.

(iii) Monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities, as specified in § 63.11890(c)(2).

(3) *Records of calculated emission and operating parameter values.* You must retain for 5 years a record of CEMS and CPMS data as specified in paragraphs (e)(3)(i) and (ii) of this section, unless an alternative recordkeeping system has been requested and approved.

(i) Except as specified in paragraphs (e)(3)(ii) of this section, retain for 5 years the records of the average values for each continuously monitored operating parameter and pollutant specified in §§ 63.11925(e)(3)(ii), 63.11925(e)(4)(ii)(B), 63.11960(c)(2), and 63.11975(a)(2) for CEMS and CPMS.(ii) In lieu of calculating and recording the average value specified in paragraphs (e)(3)(i) of this section, if all 1-hour averages specified in § 63.11935(e) demonstrate compliance with your parameter operating limit or the applicable pollutant emission limit in Table 1 or 2 to this subpart for the block average period, you may record a statement that all recorded 1-hour averages met the operating limit or emission limit, as applicable, and retain for 5 years this statement and all recorded CPMS or CEMS data for the block average period.

(4) *Information to be included in records.* You must keep records of each operating scenario as specified in paragraphs (e)(4)(i) through (viii) of this section, as applicable.

(i) You must keep a schedule or log of operating scenarios, updated each time a different operating scenario is put into effect.

(ii) A description of the process and the type of process components used.

(iii) An identification of related process vents, wastewater streams, or resin strippers including their associated emissions episodes.

(iv) The applicable control requirements of this subpart for process vents, resin strippers, and/or treatment processes.

(v) The control device, resin stripper, and/or treatment process, including a description of operating and testing conditions.

(vi) Combined emissions that are routed to the same control device, resin stripper, and/or treatment process.

(vii) The applicable monitoring requirements of this subpart and any operating limit that assures compliance for all emissions routed to the control device resin stripper, and/or treatment process.

(viii) Calculations and engineering analyses required to demonstrate compliance.

(f) *Process vents.* You must include the records specified in paragraphs (f)(1) and (2) of this section, as applicable, for process vents.

(1) Records of performance tests as required in § 63.10(b)(2)(viii). You must also collect the applicable control device operating parameters required in § 63.11940 over the full period of the performance test.

(2) If you use a control device to comply with this subpart and you are required to use CPMS, you must keep up-to-date and readily accessible records for your process vents as specified in paragraphs (f)(2)(i) through (vi) of this section, as applicable.

(i) If you use a flow indicator, you must keep records of periods of no flow to the control device, including the start and stop time and dates of periods of flow and no flow.

(ii) If you use a catalytic incinerator for which you have selected the alternative monitoring specified in § 63.11940(b)(3), you must also maintain records of the results of the annual catalyst sampling and inspections required by § 63.11940(b)(3)(i) and (ii) including any subsequent corrective actions taken.

(iii) If you use a regenerative adsorber as specified in § 63.11940(d), the records specified in paragraphs (f)(2)(iii)(A) through (H) of this section, as applicable, must be kept.

(A) Records of total regeneration stream mass flow for each adsorber-bed regeneration cycle.

(B) Records of the temperature of the adsorber bed after each regeneration and within 15 minutes of completing any cooling cycle.

(C) For non-vacuum and non-steam regeneration systems, records of the temperature of the adsorber bed during each regeneration except during any temperature regulating (cooling or warming to bring bed temperature closer to vent gas temperature) portion of the regeneration cycle.

(D) If adsorber regeneration vacuum is monitored pursuant to § 63.11940(d)(4), records of the vacuum profile over time and the amount of time the vacuum level is below the minimum vacuum target for each adsorber-bed regeneration cycle.

(E) Records of the regeneration frequency and duration.

(F) Daily records of the verification inspections, including the visual observations and/or any activation of an automated alarm or shutdown system with a written entry into a log book or other permanent form of record.

(G) Records of the maximum volatile organic compound or HAP outlet concentration observed over the last 5 minutes of the adsorption cycle for each adsorber bed. Records must be weekly or for every regeneration cycle if the regeneration cycle is greater than 1 week.

(H) Records of the date and time the adsorbent had last been replaced.

(iv) If you use a non-regenerative adsorber as specified in § 63.11940(e), the records specified in paragraphs (f)(2)(iv)(A) through (C) of this section, as applicable, must be kept.

(A) A record of the average life of the bed, as determined by § 63.11940(e)(1), including the date the average life was determined.

(B) Daily, weekly, or monthly records of the maximum volatile organic compound or HAP outlet concentration, as specified by § 63.11940(e)(2).

(C) Records of bed replacement including the date and time the adsorbent had last been replaced, and the date and time in which breakthrough is detected.

(v) If you use sorbent injection as specified in § 63.11940(g), you must keep records of the type and brand of sorbent used. If the type or brand of sorbent is changed, you must maintain documentation that the substitute will provide the same or better level of control as the original sorbent.

(vi) If you use a fabric filter as specified in § 63.11940(h), you must maintain the records specified in paragraphs (f)(2)(vi)(A) through (C) of this section for each bag leak detector used.

(A) An operation and maintenance plan as described in § 63.11940(h)(10).

(B) A corrective action plan as described in § 63.11940(h)(11).

(C) Records of any bag leak detection system alarm, including the date and time, with a brief explanation of the cause of the alarm and the corrective action taken.

(g) *Closed vent systems.* You must keep the records specified in paragraphs (g)(1) through (6) of this section, and you must record any additional information as specified in § 63.11930, as applicable.

(1) Each alarm triggered because flow was detected in a bypass as specified in § 63.11930(g)(1)(i).

(2) Inspections of seals or closure mechanisms as specified in § 63.11930(g)(1)(ii).

(3) Copies of compliance reports for closed vent system leak inspections as specified in § 63.11985(b)(9) and § 63.11930(g)(2) and (3).

(4) Instrument calibration records as specified in § 63.11930(g)(4).

(5) Unsafe-to-inspect equipment as specified in § 63.11930(g)(5).

(6) Pressure alarms as specified by § 63.11930(h)(2) and (3).

(h) *Resin stripper.* For resin strippers, you must maintain the records specified in paragraphs (h)(1) through (3) of this section.

(1) All sampling data, including monthly measurements of the concentration of vinyl chloride and total HAP compounds in the stripped resin exiting the resin stripper for each type of resin produced.

(2) The applicable operating parameters required in § 63.11960(c) over the full period of the sampling.

(3) The quantity (tons) of resin produced per grade per day.

(i) *Wastewater.* For wastewater treatment processes, you must maintain the records specified in paragraphs (i)(1) through (6) of this section.

(1) A description of the wastewater generation activities and treatment process.

(2) Records of the control level determinations specified in § 63.11965(a)(1)(i) and (ii) for each wastewater stream and the type of treatment applied if required in § 63.11965(b) and (c).

(3) Records of the initial performance test specified in § 63.11970(a) including the operating parameters monitored during testing and the average of each parameter, averaged over the testing period.

(4) Records of the annual average flow rate as determined in § 63.11965(a)(2) and § 63.11975(e)(2), including documentation of how the average flow rate was determined.

(5) All testing data, including monthly measurements of the concentrations of vinyl chloride and the concentration of total HAP that are listed in Table 9 to subpart G of this part in each wastewater stream required to be measured, as specified in § 63.11975. You must also record the applicable operating parameters required in § 63.11975(a) over the full period of the sampling.

(6) You must keep any other applicable records that are required by the recordkeeping requirements specified in § 63.147 of subpart G of this part.

(j) *Other emission sources.* You must keep the records specified in paragraphs (j)(1) and (2) of this section.

(1) All engineering calculations, testing, sampling, and monitoring results and data specified in § 63.11955.

(2) Each occurrence that you do not comply with the requirements in § 63.11955.

§ 63.11995 In what form and how long must I keep my records?

(a) You must keep records for 5 years in a form suitable and readily available for expeditious review, as specified in § 63.10(b)(1).

(b) You must keep each record on site for at least 2 years, as specified in § 63.10(b)(1). You can keep the records off site for the remaining 3 years. Records may be maintained in hard copy or computer-readable format including, but not limited to, on paper, microfilm, hard disk drive, floppy disk, compact disk, magnetic tape, or microfiche.

§ 63.12000 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the Administrator, as defined in § 63.2, or a delegated authority such as your state, local, or Tribal agency. If the Administrator has delegated authority to your state, local, or Tribal agency, then that agency (as well as the Administrator) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or Tribal agency, the authorities listed in paragraphs (b)(1) through (4) of this section are retained by the Administrator and are not transferred to the state, local, or Tribal agency, however, the EPA retains oversight of this subpart and can take enforcement actions, as appropriate.

(1) Approval of alternatives to the emission limits, operating limits, and work practice standards specified in this subpart.

(2) Approval of a major change to test methods, as defined in § 63.90, approval of any proposed analysis methods, and approval of any proposed test methods.

(3) Approval of a major change to monitoring, as defined in § 63.90.

(4) Approval of a major change to recordkeeping and reporting, as defined in § 63.90.

Definitions

§ 63.12005 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, and in this section, as follows:

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Batch emission episode means a discrete venting episode that is associated with a single unit operation. A unit operation may have more than one batch emission episode. For example, a displacement of vapor resulting from the charging of a vessel with HAP will result in a discrete emission episode that will last through the duration of the charge and will have an average flowrate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process components, depending on process operations.

Batch operation means a noncontinuous operation involving intermittent or discontinuous feed into process components, and, in general, involves the emptying of the process components after the operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

Batch process vent means a vent from a batch operation from a PVCPU or vents from multiple PVCPUs within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Batch process vents also include vents with intermittent flow from continuous operations that are not combined with any stream that originated as a continuous gas stream from the same continuous process. Examples of batch process vents include, but are not limited to, vents on condensers used for product recovery, polymerization reactors, and process tanks. The following are not batch process vents for the purposes of this subpart:

(1) Continuous process vents.

(2) Bottoms receivers.

(3) Surge control vessels.

(4) A gas stream routed to other processes for reaction or other use in another process (*i.e.,* for chemical value as a product, isolated intermediate, byproduct, coproduct, or for heat value).

(5) Vents on storage tanks, wastewater emission sources, or pieces of process components subject to the emission limits and work practice standards for storage vessels, equipment leaks, and wastewater.

(6) Drums, pails, and totes.

(7) Vents from a pressure relief device having an actuation pressure of 2 psig or higher.

Bottoms receiver means a tank that collects bottoms from continuous distillation before the stream is sent for storage or for further downstream processing. A rundown tank is an example of a bottoms receiver.

Bulk process means a process for producing polyvinyl chloride resin that is characterized by a two-step anhydrous polymerization process: the formation of small resin particles in a pre-polymerization reactor using small amounts of vinyl chloride monomer, an initiator, and agitation; and the growth of the resin particles in a post-polymerization reactor using additional vinyl chloride monomer. Resins produced using the bulk process are referred to as bulk resins.

Bypass means to direct a process vent or closed vent system stream to the atmosphere such that it does not first pass through an emission control device.

Calendar year means the period between January 1 and December 31, inclusive for a given year.

Capacity means the nominal figure or rating given by the manufacturer of the storage vessel, condenser, or other process component.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (*e.g.,* from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Closed vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that collect or transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit used for the combustion of organic emissions, such as a flare, incinerator, process heater, or boiler.

Conservation vent means an automatically operated (*e.g.,* weight-loaded or spring-loaded) safety device used to prevent the operating pressure of a storage vessel from exceeding the maximum allowable working pressure of the process component. Conservation vents open and close to permit only the intake or outlet relief necessary to keep the storage vessel within permissible working pressures, and reseal automatically.

Container means a portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include, but are not limited to, drums, pails, and portable cargo containers known as "portable tanks" or "totes." Container does not include transport vehicles or barges.

Continuous emission monitoring system (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of emissions.

Continuous operation means any operation that is not a batch operation.

Continuous parameter monitoring system (CPMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 63.11990(e)(1).

Continuous process vent means the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream has the following characteristics:

(1) Some, or all, of the gas stream originates as a continuous flow from any continuous PVCPU operation during operation of the PVCPU.

(2) The discharge to the atmosphere (with or without passing through a control device) meets at least one of the following conditions:

(i) Is directly from any continuous operation.

(ii) Is from any continuous operation after passing solely (*i.e.,* without passing through any other unit operation for a process purpose) through one or more recovery devices within the PVCPU.

(iii) Is from a device recovering only mechanical energy from a gas stream that comes either directly from any continuous operation, or from any continuous operation after passing solely (*i.e.,* without passing through any other unit operation for a process purpose) through one or more recovery devices within the PVCPU.

(3) The gas stream is in the gas phase from the point of origin at the continuous operation to the point of discharge to the atmosphere (or to the point of entry into a control device, if any).

(4) The gas stream is discharged to the atmosphere either on site, off site, or both. If the gas stream is discharged to an off-site or on-site location that you do not own or operate, you must comply with the requirements in § 63.113(a)(i) of this part.

(5) The gas stream is not any of the following items:

(i) A pressure relief device discharge having an actuation pressure of 2 psig or higher.

(ii) A leak from equipment subject to this subpart.

(iii) A gas stream exiting a control device used to comply with the emission limits and work practice standards of this subpart.

(v) A gas stream transferred to other processes (on site or off site) for reaction or other use in another process (*i.e.,* for chemical value as a product, isolated intermediate, by-product, or co-product, or for heat value).

(vi) A storage vessel vent or transfer operation vent subject to the provisions of this subpart.

(vii) A vent from a waste management unit subject to the provisions of subpart G of this subpart, as specified in this subpart.

(viii) A gas stream exiting an analyzer (but they must be controlled as sample purge).

(6) The gas stream would meet the characteristics specified in paragraphs (1) through (6) of this definition, but, for purposes of avoiding applicability, has been deliberately interrupted, temporarily liquefied, or routed through any process component for no process purpose.

Control device means, with the exceptions noted in this definition, a combustion device, recovery device, recapture device, or any combination of these devices used to comply with this subpart. Process condensers are not control devices.

Control system means the combination of the closed vent system and the control devices used to collect and control vapors or gases from a regulated emission source.

Cooling tower means a heat removal device used to remove the heat absorbed in circulating cooling water systems by transferring the heat to the atmosphere using natural or mechanical draft.

Cooling tower return line means the main water trunk lines at the inlet to the cooling tower before exposure to the atmosphere.

Corrective action plan means a description of all reasonable interim and long-term measures, if any, that are available, and an explanation of why the selected corrective action is the best alternative, including, but not limited to, any consideration of cost-effectiveness.

Day means a calendar day, unless otherwise specified in this subpart.

Degassing means the process of removing HAP organic gases from a storage vessel.

Dioxin/furan means total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Dispersion process means a process for producing polyvinyl chloride resin that is characterized by the formation of the polymers in soap micelles that contain small amounts of vinyl chloride monomer. Emulsifiers are used to disperse vinyl chloride monomer in the water phase. Initiators used in the dispersion process are soluble in water. Resins produced using the dispersion process are referred to as latex or dispersion resins.

Empty or emptying means the partial or complete removal of stored liquid from a storage vessel. Storage vessels that contain liquid only as a result of the liquid clinging to the walls or bottoms, or resting in pools due to bottom irregularities, are considered completely empty.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in HAP service; and any control devices or systems used to comply with this subpart.

Fill or filling means the introduction of liquid into a storage vessel, but not necessarily to capacity.

First attempt at repair, for the purposes of this subpart, means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in § 63.11930(f) to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Fixed roof storage vessel means a vessel with roof that is mounted (*i.e.,* permanently affixed) on a storage vessel and that does not move with fluctuations in stored liquid level.

Flow indicator means a device that indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Grade means the subdivision of PVC resin classification which describes it as a unique resin, *i.e.,* the most exact description of a resin with no further subdivision.

Heat exchange system means a device or collection of devices used to transfer heat from process fluids to water without intentional direct contact of the process fluid with the water (*i.e.,* non-contact heat exchanger) and to transport and/or cool the water in a closed-loop recirculation system (cooling tower system) or a once-through system (*e.g.,* river or pond water). For closed-loop recirculation systems, the heat exchange system consists of a cooling tower, all heat exchangers that are serviced by that cooling tower, and all water lines to and from the heat exchanger(s). For once-through systems, the heat exchange system consists of one or more heat exchangers servicing an individual process unit and all water lines to and from the heat exchanger(s). Intentional direct contact with process fluids results in the formation of a wastewater.

In HAP service means that a process component either contains or contacts a liquid that is at least 5 percent HAP by weight or a gas that is at least 5 percent by volume HAP as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a process component is not in HAP service.

In vacuum service means that the process component is operating at an internal pressure that is at least 5 kilopascals (kPa) (0.7 pounds per square inch absolute) below ambient pressure.

Incinerator means an enclosed combustion device with an enclosed fire box that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. This energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Maximum representative operating conditions means process operating conditions that result in the most challenging condition for the control device. The most challenging condition for the control device may include, but is not limited to, the highest or lowest HAP mass loading rate to the control device, the highest or lowest HAP mass loading rate of constituents that approach the limits of solubility for scrubbing media, the highest or lowest HAP mass loading rate of constituents that approach limits of solubility for scrubbing media.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total HAP in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined by any one of the following methods or references:

(1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss From External Floating-Roof Tanks (incorporated by reference, see § 63.14).

(2) As obtained from standard reference texts.

(3) As determined by the American Society for Testing and Materials Method D2879–10 (incorporated by reference, see § 63.14).

(4) Any other method approved by the Administrator.

Nonstandard batch means a batch process that is operated outside of the range of operating conditions that are documented in an existing operating scenario but is still a reasonably anticipated event. For example, a nonstandard batch occurs when additional processing or processing at different operating conditions must be conducted to produce a product that is normally produced under the conditions described by the standard batch. A nonstandard batch may be necessary as a result of a malfunction, but it is not itself a malfunction.

Operating block means a period of time that is equal to the time from the beginning to end of batch process operations within a process.

Operating day means a 24-hour period between 12 midnight and the following midnight during which PVC is produced at any time in the PVCPU. It is not necessary for PVC to be produced for the entire 24-hour period.

Operating scenario means, for the purposes of reporting and recordkeeping, any specific operation of a regulated process as described by reports specified in § 63.11985(b)(3) and records specified in § 63.11990(e)(4).

Plant site means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Polymerization reactor means any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride. For bulk processes, the polymerization reactor includes pre-polymerization reactors and post-polymerization reactors.

Polyvinyl chloride (PVC) means a synthetic thermoplastic polymer that is derived from the polymerization of vinyl chloride and has the general chemical structure $(\text{–}H_2CCHCl\text{–})_n$.

Polyvinyl chloride is typically a white powder or colorless granule. Polyvinyl chloride is produced by different processes, including (but not limited to), suspension, dispersion/emulsion, bulk, and solution processes.

Polyvinyl chloride and copolymers production process unit or PVCPU means a collection of process components assembled and connected by hard-piping or duct work, used to process raw materials and to manufacture polyvinyl chloride and/or polyvinyl chloride copolymers. A PVCPU includes, but is not limited to, polymerization reactors; resin stripping operations; blend tanks; centrifuges; dryers; product separators; recovery devices; feed, intermediate, and product storage vessels such as reactant storage tanks, holding tanks, mixing and weighing tanks, and final product storage tanks or storage silos; finished product loading operations; heat exchange systems; wastewater strippers; wastewater treatment systems; connected ducts and piping; equipment components including pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and connectors. A PVCPU does not include chemical manufacturing process units, as defined in § 63.101, that produce vinyl chloride monomer or other raw materials used in the PVC polymerization process.

Polyvinyl chloride copolymer means a synthetic thermoplastic polymer that is derived from the simultaneous polymerization of vinyl chloride and another vinyl monomer such as vinyl acetate. Polyvinyl chloride copolymer is produced by different processes, including, but not limited to, suspension, dispersion/emulsion, bulk, and solution processes.

Pressure relief device means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process component. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 pounds per square inch gauge or by a vacuum are not pressure relief devices.

Pressure vessel means a vessel that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the pressure vessel during filling of the pressure vessel to its design capacity.

Process change means an addition to or change in a PVCPU and/or its associated process components that creates one or more emission points or changes the characteristics of an emission point such that a new or different emission limit, operating parameter limit, or work practice requirement applies to the added or changed emission points. Examples of process changes include, but are not limited to, changes in production capacity, production rate, or catalyst type, or whenever there is replacement, removal, or addition of recovery device components. For purposes of this definition, process changes do not include process upsets, changes that do not alter the process component configuration and operating conditions, and unintentional, temporary process changes. A process change does not include moving within a range of conditions identified in the standard batch, and a nonstandard batch does not constitute a process change.

Process component means any unit operation or group of units operations or any part of a process or group of parts of a process that are assembled to perform a specific function (*e.g.,* polymerization reactor, dryers, *etc.*). Process components include equipment, as defined in this section.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a batch process. All condensers recovering condensate from a batch process at or above the boiling point or all condensers in line prior to a vacuum source are considered process condensers. Typically, a primary condenser or condensers in series are considered to be integral to the batch regulated process if they are capable of and normally used for the purpose of recovering chemicals for fuel value (*i.e.,* net positive heating value), use, reuse or for sale for fuel value, use, or reuse. This definition does not apply to a condenser that is used to remove materials that would hinder performance of a downstream recovery device as follows:

(1) To remove water vapor that would cause icing in a downstream condenser.

(2) To remove water vapor that would negatively affect the adsorption capacity of carbon in a downstream carbon adsorber.

(3) To remove high molecular weight organic compounds or other organic compounds that would be difficult to remove during regeneration of a downstream adsorber.

Process tank means a tank or other vessel (*e.g.,* pressure vessel) that is used within an affected source to both: (1) Collect material discharged from a feedstock storage vessel, process tank, or other PVCPU process component, and (2) discharge the material to another process tank, process component, byproduct storage vessel, or product storage vessel.

Process unit means the process components assembled and connected by pipes or ducts to process raw and/or intermediate materials and to manufacture an intended product. For the purpose of this subpart, process unit includes, but is not limited to, polyvinyl chloride production process.

Process vent means batch process vent or continuous process vent from process components including polymerization reactors, resin strippers, vinyl chloride monomer recovery systems, slip gauges, unloading and loading lines, samples, wastewater collection and treatment systems, and other process components prior to the resin stripper.

Product means a polymer produced using the same monomers and varying in additives (*e.g.,* initiators, terminators, *etc.*); catalysts; or in the relative proportions of monomers, that is manufactured by a process unit. With respect to polymers, more than one recipe may be used to produce the same product, and there can be more than one grade of a product. Product also means a chemical that is not a polymer, which is manufactured by a process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Recipe means a specific composition, from among the range of possible compositions that may occur within a product, as defined in this section. A recipe is determined by the proportions of monomers and, if present, other reactants and additives that are used to make the recipe.

Recovery device means an individual process component capable of and normally used for the purpose of recovering chemicals for fuel value (*i.e.,* net positive heating value), use, reuse or for sale for fuel value, use, or reuse. Examples of process components that may be recovery devices include absorbers, adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers (*e.g.,* wastewater steam and vacuum strippers), or thin-film evaporation units. For purposes of this subpart, recovery devices are control devices.

Repaired, for the purposes of this subpart, means equipment that is adjusted or otherwise altered to eliminate a leak as defined in the applicable sections of this subpart; and unless otherwise specified in applicable provisions of this subpart, is inspected as specified in § 63.11930(f) to verify that emissions from the equipment are below the applicable leak definition.

Resin stripper means a unit that removes organic compounds from a raw polyvinyl chloride and copolymer product. In the production of a polymer, stripping is a discrete step that occurs after the polymerization reaction and before drying or other finishing operations. Examples of types of stripping include steam stripping, vacuum stripping, or other methods of devolatilization. For the purposes of this subpart, devolatilization that occurs in dryers or other finishing operations is not resin stripping. Resin stripping may occur in a polymerization reactor or in a batch or continuous stripper separate from the polymerization reactor where resin stripping occurs.

Root cause analysis means an assessment conducted through a process of investigation to determine the primary cause, and any other significant contributing cause(s), of a discharge of gases in excess of specified thresholds.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Slip gauge means a gauge that has a probe that moves through the gas/liquid interface in a storage vessel and indicates the level of product in the vessel by the physical state of the material the gauge discharges.

Solution process means a process for producing polyvinyl chloride resin that is characterized by the anhydrous formation of the polymer through precipitation. Polymerization occurs in an organic solvent in the presence of an initiator where vinyl chloride monomer and co-monomers are soluble in the solvent, but the polymer is not. The PVC polymer is a granule suspended in the solvent, which then precipitates out of solution. Emulsifiers and suspending agents are not used in the solution process. PVC resins produced using the solution process are referred to as solution resins.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of ±0.02 specific gravity units.

Standard procedure means a formal written procedure officially adopted by the plant owner or operator and available on a routine basis to those persons responsible for carrying out the procedure.

Storage vessel means a tank or other vessel (*e.g.,* pressure vessel) that is part of an affected source and is used to store a gaseous, liquid, or solid feedstock, byproduct, or product that contains organic HAP. *Storage vessel* does not include:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) Process tanks;

(3) Vessels with capacities smaller than 10,040 gallons;

(4) Vessels storing organic liquids that contain organic HAP only as impurities;

(5) Bottoms receiver tanks;

(6) Surge control vessels; and

(7) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Stripped resin means the material exiting the resin stripper that contains polymerized vinyl chloride.

Supplemental combustion air means the air that is added to a vent stream after the vent stream leaves the unit operation. Air that is part of the vent stream as a result of the nature of the unit operation is not considered supplemental combustion air. Air required to operate combustion device burner(s) is not considered supplemental combustion air. Air required to ensure the proper operation of catalytic oxidizers, to include the intermittent addition of air upstream of the catalyst bed to maintain a minimum threshold flow rate through the catalyst bed or to avoid excessive temperatures in the catalyst bed, is not considered to be supplemental combustion air.

Surge control vessel means feed drums, recycle drums, and intermediate vessels used as a part of any continuous operation. Surge control vessels are used within an affected source when in-process storage, mixing, or management of flow rates or volumes is needed to introduce material into continuous operations.

Suspension process means a process for producing polyvinyl chloride resin that is characterized by the formation of the polymers in droplets of liquid vinyl chloride monomer or other co-monomers suspended in water. The droplets are formed by agitation and the use of protective colloids or suspending agents. Initiators used in the suspension process are soluble in vinyl chloride monomer. Polyvinyl chloride resins produced using the suspension process are referred to as suspension resins.

Treatment process means a specific technique or collection of techniques that remove or destroy the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process or collection of processes applied to wastewater streams or residuals to comply with §§ 63.11965 and 63.11970. Most treatment processes are conducted in tanks.

Type of resin means the broad classification of resin referring to the basic manufacturing process for producing that resin, including, but not limited to, suspension, dispersion/emulsion, bulk, and solution processes.

Unloading operations means the transfer of organic liquids from a transport vehicle, container, or storage vessel to process components within the affected source.

Wastewater means water that comes into direct contact with HAP or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing HAP but that has not been discharged untreated as wastewater. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; water discarded from a control device; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics. Gasholder seal water is not wastewater until it is removed from the gasholder.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof that is promulgated pursuant to section 112(h) of the Clean Air Act.

TABLE 1 TO SUBPART HHHHHHH OF PART 63—EMISSION LIMITS AND STANDARDS FOR EXISTING AFFECTED SOURCES

For this type of emission point . . .	And for this air pollutant . . .	And for an affected source producing this type of PVC resin . . .	You must meet this emission limit . . .
Process vents[1]	Vinyl chloride	All resin types	0.32 parts per million by volume at 3-percent oxygen (ppmv).

TABLE 1 TO SUBPART HHHHHHH OF PART 63—EMISSION LIMITS AND STANDARDS FOR EXISTING AFFECTED SOURCES—Continued

For this type of emission point . . .	And for this air pollutant . . .	And for an affected source producing this type of PVC resin . . .	You must meet this emission limit . . .
	Total organic HAP	All resin types	12 ppmv. (For compliance determination, demonstrate that total hydrocarbon is less than or equal to 2 ppmv measured as propane).
	Hydrogen chloride	All resin types	150 ppmv.
	Dioxins/furans (toxic equivalency basis).	All resin types	0.023 ng/dscm at 3-percent oxygen.
Stripped resin	Vinyl chloride	Bulk	7.1 parts per million by weight (ppmw).
		Dispersion	55 ppmw.
		All other resins[2]	0.48 ppmw.
	Total HAP	Bulk	170 ppmw.
		Dispersion	110 ppmw.
		All other resins[2]	76 ppmw.
Wastewater	Vinyl chloride	All resin types	See Table 3 to this subpart.
	Total HAP	All resin types.	

[1] Emission limits at 3 percent oxygen, dry basis.
[2] Includes, but is not limited to, PVCPUs using the suspension process and solution process.

TABLE 2 TO SUBPART HHHHHHH OF PART 63—EMISSION LIMITS AND STANDARDS FOR NEW AFFECTED SOURCES

For this type of emission point . . .	And for this air pollutant . . .	And for an affected source producing this type of PVC resin . . .	You must meet this emission limit . . .
Process vents[1]	Vinyl chloride	All resin types	3.2 parts per billion by volume at 3-percent oxygen (ppbv).
	Total organic HAP	All resin types	0.22 ppmv. (For compliance determination, demonstrate that total hydrocarbon is less than or equal to 2 ppmv measured as propane).
	Hydrogen chloride	All resin types	0.17 ppmv.
	Dioxins/furans (toxic equivalency basis).	All resin types	0.0087 ng/dscm at 3-percent oxygen.
Stripped resin	Vinyl chloride	Bulk	7.1 parts per million by weight (ppmw).
		Dispersion	41 ppmw.
		All other resins[2]	0.20 ppmw
	Total HAP	Bulk	170 ppmw.
		Dispersion	58 ppmw.
		All other resins[2]	42 ppmw.
Wastewater	Vinyl chloride	All resin types	See Table 3 to this subpart.
	Total HAP	All resin types.	

[1] Emission limits at 3 percent oxygen, dry basis.
[2] Includes, but is not limited to, PVCPUs using the suspension process and solution process.

TABLE 3 TO SUBPART HHHHHHH—EMISSION LIMITS AND STANDARDS FOR WASTEWATER FOR NEW AND EXISTING AFFECTED SOURCES

If a wastewater stream is determined to have a . . .	Then . . .	And the wastewater stream must meet the following limit or standard:
Vinyl chloride concentration less than 10 parts per million by weight (ppmw) at the point of generation.	You are not required to use a wastewater treatment process to reduce your vinyl chloride emissions and compliance must be demonstrated as specified in § 63.11970(b).	Less than 10 ppmw vinyl chloride.[1]
HAP concentration (based on HAP listed in Table 9 to subpart G of this part) less than 1,000 ppmw; or. Annual average flow rate less than 10 liters per minute.	You are not required to use a wastewater treatment process to reduce your total HAP emissions (for HAP listed in Table 9 to subpart G of this part) and compliance must be demonstrated as specified in § 63.11970(c).	Less than 1,000 ppmw of HAP listed in Table 9 to subpart G of this part and less than 10 liters per minute annual average flow rate.[2]
Vinyl chloride concentration greater than or equal to 10 ppmw at the point of generation.	You must use a wastewater treatment process and demonstrate compliance as specified in §§ 63.11965(b) and 63.11970(a), respectively[1].	*Existing sources*—0.11 ppmw vinyl chloride at the stripper outlet.[1] *New sources*—0.0060 ppmw vinyl chloride at the stripper outlet.[1]

Table 3 to Subpart HHHHHHH—Emission Limits and Standards for Wastewater for New and Existing Affected Sources—Continued

If a wastewater stream is determined to have a . . .	Then . . .	And the wastewater stream must meet the following limit or standard:
HAP concentration (based on HAP listed in Table 9 to subpart G of this part) greater than or equal to 1,000 ppmw; HAP and Annual average flow rate greater than or equal to 10 liters per minute.	You must use a wastewater treatment process and demonstrate compliance as specified in §§ 63.11965(c) and 63.11970(a), respectively.	The provisions in subpart G of this part, as referenced in § 63.11965(c)(1) through (4).[2]

[1] Refer to § 63.11975(a)(3) and (d) for the data averaging period for determining compliance.
[2] Refer to subpart G of this part for the data averaging period for determining compliance.

Table 4 to Subpart HHHHHHH of Part 63—Summary of Control Requirements for Storage Vessels at New and Existing Sources

If the storage vessel capacity (gallons) is * * *	And the vapor pressure[1] (psia) is * * *	Then, you must use the following type of storage vessel: * * *
≥ 20,000 but < 40,000	≥ 4	Internal floating roof, external floating roof, or fixed roof vented to a closed vent system and control device achieving 95 percent reduction.[2]
≥ 40,000	≥ 0.75	Internal floating roof, external floating roof, or fixed roof vented to a closed vent system and control device achieving 95 percent reduction.[2]
Any capacity	> 11.1	Pressure vessel.[3]
All other capacity and vapor pressure combinations		Fixed roof.[4]

[1] Maximum true vapor pressure of total HAP at storage temperature.
[2] If using a fixed roof storage vessel vented to a closed vent system and control device, you must meet the requirements in § 63.11910(a) for fixed roof storage vessels. If using an internal floating roof storage vessel or external floating roof storage vessels, you must meet the requirements in § 63.11910(b) for internal floating roof storage vessels or external floating roof storage vessels, as applicable.
[3] Meeting the requirements of § 63.11910(c) for pressure vessels.
[4] Meeting the requirements in § 63.11910(a) for fixed roof storage vessels.

Table 5 to Subpart HHHHHHH of Part 63—Applicability of the General Provisions to Part 63

Citation	Subject	Applies to subpart HHHHHHH	Explanation
§ 63.1(a)(1)–(a)(4), (a)(6), (a)(10)–(a)(12), (b)(1), (b)(3), (c)(1), (c)(2), (c)(5), (e).	Applicability	Yes	
§ 63.1(a)(5), (a)(7)–(a)(9), (b)(2), (c)(3), (c)(4), (d).	Reserved	No	
§ 63.2	Definitions	Yes	Additional definitions are found in § 63.12005.
§ 63.3	Units and abbreviations	Yes	
§ 63.4	Prohibited activities and circumvention.	Yes	
§ 63.5	Preconstruction review and notification requirements.	Yes	
§ 63.6(a), (b)(1)–(b)(5), (b)(7), (c)(1), (c)(2), (c)(5), (e)(1)(iii), (f)(2), (f)(3), (g), (i), (j).	Compliance with standards and maintenance requirements.	Yes	§ 63.11875 specifies compliance dates.
§ 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(2)(ii), (h)(3), (h)(5)(iv).	[Reserved]	No	
§ 63.6(e)(1)(i), (e)(1)(ii), (e)(3), (f)(1)	Startup, shutdown, and malfunction provisions.	No. See § 63.11890(b) for general duty requirement.	
§ 63.6(h)(1), (h)(2)(i), (h)(2)(iii), (h)(4), (h)(5)(i)–(h)(5)(iii), (h)(5)(v), (h)(6)–(h)(9).	Compliance with opacity and visible emission standards.	No	Subpart HHHHHHH does not specify opacity or visible emission standards.
§ 63.7(a)(1), (a)(2)(ix), (a)(3), (a)(4), (b)–(d), (e)(2)–(e)(4), (f)–(h).	Performance testing requirements	Yes	
§ 63.7(e)(1)	Performance testing	No. See especially § 63.11945, 63.11960(d), 63.11980(a).	
§ 63.8(a)(1), (a)(2), (a)(4), (b), (c)(1)(i), (c)(1)(ii), (c)(2)–(c)(4), (c)(6)–(c)(8).	Monitoring requirements	Yes	Except cross reference in § 63.8(c)(1)(i) to § 63.6(e)(1) is replaced with a cross-reference to § 63.11890(b).
§ 63.8(a)(3)	[Reserved]	No	

TABLE 5 TO SUBPART HHHHHHH OF PART 63—APPLICABILITY OF THE GENERAL PROVISIONS TO PART 63—Continued

Citation	Subject	Applies to subpart HHHHHHH	Explanation
§ 63.8(c)(1)(iii)	Requirement to develop SSM plan for continuous monitoring systems.	No	
§ 63.8(c)(5)	Continuous opacity monitoring system minimum procedures.	No	Subpart HHHHHHH does not have opacity or visible emission standards.
§ 63.8(d)(3)	Written procedures for continuous monitoring systems (CMS).	Yes, except for last sentence, which refers to an SSM plan. SSM plans are not required.	
§ 63.8(g)	Reduction of monitoring data	Yes	Except that the minimum data collection requirements are specified in § 63.11890(e).
§ 63.9(a), (b)(1), (b)(2), (b)(4)(i), (b)(4)(v), (b)(5), (c)–(e), (g)(1), (g)(3), (h)(1)–(h)(3), (h)(5), (h)(6), (i), (j).	Notification requirements	Yes	
§ 63.9(f)	Notification of opacity and visible emission observations.	No	Subpart HHHHHHH does not have opacity or visible emission standards.
§ 63.9(g)(2)	Use of continuous opacity monitoring system data.	No	Subpart HHHHHHH does not require the use of continuous opacity monitoring system.
§ 63.9(b)(3), (b)(4)(ii)–(iv), (h)(4)	[Reserved]	No	
§ 63.10(a), (b)(1)	Recordkeeping and reporting requirements.	Yes	
§ 63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups and shutdowns.	No	
§ 63.10(b)(2)(ii)	Recordkeeping of malfunctions	No. See 63.11985(c)(4) and (8) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction. See also 63.11985(b)(4)(i), for deviation reporting.	
§ 63.10(b)(2)(iii)	Maintenance records	Yes	
§ 63.10(b)(2)(iv), (b)(2)(v)	Actions taken to minimize emissions during SSM.	No	
§ 63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions.	Yes	
§ 63.10(b)(2)(vii)–(ix)	Other CMS requirements	Yes	
§ 63.10(b)(2)(xi)–(xiv)	Other recordkeeping requirements.	Yes	
§ 63.10(b)(3)	Recordkeeping requirement for applicability determinations.	Yes	
§ 63.10(c)(1), (c)(5), (c)(6)	Additional recordkeeping requirements for sources with continuous monitoring systems.	Yes	
§ 63.10(c)(2)–(4), (c)(9)	[Reserved]		
§ 63.10(c)(7)	Additional recordkeeping requirements for CMS—identifying exceedances and excess emissions.	Yes	
§ 63.10(c)(8)	Additional recordkeeping requirements for CMS—identifying exceedances and excess emissions.	Yes	
§ 63.10(c)(10)	Recording nature and cause of malfunctions.	No. See 63.11985(c)(4) and (8) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction. See also 63.11985(b)(4)(i), for deviation reporting.	
63.10(c)(11)	Recording corrective actions	No. See 63.11985(c)(4) and (8) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction. See also 63.11985(b)(4)(i), for deviation reporting.	

TABLE 5 TO SUBPART HHHHHHH OF PART 63—APPLICABILITY OF THE GENERAL PROVISIONS TO PART 63—Continued

Citation	Subject	Applies to subpart HHHHHHH	Explanation
§ 63.10(c)(13)–(14)	Records of the total process operating time during the reporting period and procedures that are part of the continuous monitoring system quality control program.	Yes	
§ 63.10(c)(15)	Use SSM plan	No	
§ 63.10(d)(1)	General reporting requirements	Yes	
§ 63.10(d)(2)	Performance test results	Yes	
§ 63.10(d)(3)	Opacity or visible emissions observations.	No	Subpart HHHHHHH does not specify opacity or visible emission standards.
§ 63.10(d)(4)	Progress reports	Yes	
§ 63.10(d)(5)	SSM reports	No. See 63.11985(c)(4) and (8) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction. See also 63.11985(b)(4)(i), for deviation reporting.	
§ 63.10(e)(1)	Additional continuous monitoring system reports—general.	Yes	
§ 63.10(e)(2)(i)	Results of continuous monitoring system performance evaluations.	Yes	
§ 63.10(e)(2)(ii)	Results of continuous opacity monitoring system performance evaluations.	No	Subpart HHHHHHH does not require the use of continuous opacity monitoring system.
§ 63.10(e)(3)	Excess emissions/continuous monitoring system performance reports.	Yes	
§ 63.10(e)(4)	Continuous opacity monitoring system data reports.	No	Subpart HHHHHHH does not require the use of continuous opacity monitoring system.
§ 63.10(f)	Recordkeeping/reporting waiver	Yes	
63.11(a)	Control device and work practice requirements—applicability.	Yes	
§ 63.11(b)	Flares	No	Facilities subject to subpart HHHHHHH do not use flares as control devices, as specified in § 63.11925(b).
§ 63.11(c)–(e)	Alternative work practice for monitoring equipment for leaks.	Yes	
§ 63.12	State authority and delegations	Yes	§ 63.12000 identifies types of approval authority that are not delegated.
§ 63.13	Addresses	Yes	
§ 63.14	Incorporations by reference	Yes	Subpart HHHHHHH incorporates material by reference.
§ 63.15	Availability of information and confidentiality.	Yes	
§ 63.16	Performance track provisions	Yes	

TABLE 6 TO SUBPART HHHHHHH OF PART 63—OPERATING PARAMETERS, OPERATING LIMITS, AND DATA MONITORING, RECORDING, AND COMPLIANCE FREQUENCIES FOR PROCESS VENTS, STRIPPED RESIN, AND WASTEWATER

For these control devices, you must monitor these operating parameters . . .	Establish the following operating limit during your initial performance test . . .	Monitor, record, and demonstrate continuous compliance using these minimum frequencies		
		Data measurement	Data recording	Data averaging period for compliance
Process Vents				
Any Control device:				
Flow to/from the control device.	N/A	Continuous	N/A	Date and time of flow start and stop.
Incinerators:				
Temperature (in fire box or downstream ductwork prior to heat exchange).	Minimum temperature	Continuous	Every 15 minutes	3-hour block average.

TABLE 6 TO SUBPART HHHHHHH OF PART 63—OPERATING PARAMETERS, OPERATING LIMITS, AND DATA MONITORING, RECORDING, AND COMPLIANCE FREQUENCIES FOR PROCESS VENTS, STRIPPED RESIN, AND WASTEWATER—Continued

For these control devices, you must monitor these operating parameters . . .	Establish the following operating limit during your initial performance test . . .	Monitor, record, and demonstrate continuous compliance using these minimum frequencies		
		Data measurement	Data recording	Data averaging period for compliance
Temperature differential across catalyst bed.	Minimum temperature differential.	Continuous	Every 15 minutes	3-hour block average.
Inlet temperature to catalyst bed and catalyst condition.	Minimum inlet temperature and catalyst condition as specified in 63.11940(b)(3).	Continuous for temperature, annual for catalyst condition.	Every 15 minutes for temperature, annual for catalyst condition.	3-hour block average for temperature, annual for catalyst condition.
Absorbers and Acid Gas Scrubbers:				
Influent liquid flow	Minimum inlet liquid flow	Continuous	Every 15 minutes	3-hour block average.
Influent liquid flow and gas stream flow.	Minimum influent liquid flow to gas stream flow ratio.	Continuous	Every 15 minutes	3-hour block average.
Pressure drop	Minimum pressure drop	Continuous	Every 15 minutes	3-hour block average.
Exhaust gas temperature.	Maximum exhaust gas temperature.	Continuous	Every 15 minutes	3-hour block average.
Change in specific gravity of scrubber liquid.	Minimum change in specific gravity.	Continuous	Every 15 minutes	3-hour block average.
pH of effluent liquid	Minimum pH	Continuous	Every 15 minutes	3-hour block average.
Causticity of effluent liquid.	Minimum causticity	Continuous	Every 15 minutes	3-hour block average.
Conductivity of effluent liquid.	Minimum conductivity	Continuous	Every 15 minutes	3-hour block average.
Regenerative Adsorber:				
Regeneration stream flow.	Minimum total flow per regeneration cycle.	Continuous	N/A	Total flow for each regeneration cycle.
Adsorber bed temperature.	Maximum temperature	Continuously after regeneration and within 15 minutes of completing any temperature regulation.	Every 15 minutes after regeneration and within 15 minutes of completing any temperature regulation.	3-hour block average.
Adsorber bed temperature.	Minimum temperature	Continuously during regeneration except during any temperature regulating portion of the regeneration cycle..	N/A	Average of regeneration cycle.
Vacuum and duration of regeneration.	Minimum vacuum and period of time for regeneration.	Continuous	N/A	Average vacuum and duration of regeneration.
Regeneration frequency.	Minimum regeneration frequency and duration.	Continuous	N/A	Date and time of regeneration start and stop.
Adsorber operation valve sequencing and cycle time.	Correct valve sequencing and minimum cycle time.	Daily	Daily	N/A.
Non-Regenerative Adsorber:				
Average adsorber bed life.	N/A	Daily until breakthrough for 3 adsorber bed change-outs.	N/A	N/A.
Outlet VOC concentration of the first adsorber bed in series.	Limits in Table 1 or 2 of this subpart.	Daily, except monthly (if more than 2 months bed life remaining) or weekly (if more than 2 weeks bed life remaining).	N/A	Daily, weekly, or monthly.
Condenser:				
Temperature	Maximum outlet temperature	Continuous	Every 15 minutes	3-hour block average.
Sorbent injection monitoring:				
Sorbent injection rate	Minimum injection rate	Continuous	Every 15 minutes	3-hour block average.
Sorbent injection carrier gas flow rate.	Minimum carrier gas flow rate	Continuous	Every 15 minutes	3-hour block average.
Downstream firebox temperature.	Minimum temperature	Continuous	Every 15 minutes	3-hour block average.

TABLE 6 TO SUBPART HHHHHHH OF PART 63—OPERATING PARAMETERS, OPERATING LIMITS, AND DATA MONITORING, RECORDING, AND COMPLIANCE FREQUENCIES FOR PROCESS VENTS, STRIPPED RESIN, AND WASTEWATER—Continued

For these control devices, you must monitor these operating parameters . . .	Establish the following operating limit during your initial performance test . . .	Monitor, record, and demonstrate continuous compliance using these minimum frequencies		
		Data measurement	Data recording	Data averaging period for compliance
Upstream particulate matter control device downstream temperature.	Minimum temperature	Continuous	Every 15 minutes	3-hour block average.
Fabric Filter:				
Alarm time	Maximum alarm time is not established on a site-specific basis but is specified in § 63.11940(h)(1).	Continuous	N/A	Maximum alarm time specified in § 63.11940(h)(1).
Stripped Resin				
Stripper:				
Steam to feed ratio [1]	Minimum steam to feed ratio	Continuous	Every 15 minutes	Daily.
Vacuum level	Minimum vacuum	Continuous	Every 15 minutes	Daily.
Resin exit temperature	Minimum temperature	Continuous	Every 15 minutes	Daily.
Resin inlet flow rate	Maximum flow rate	Continuous	Every 15 minutes	Daily.
Wastewater				
Stripper:				
Steam to feed ratio [1]	Minimum steam to feed ratio	Continuous	Every 15 minutes	Daily.
Bottoms exit temperature.	Minimum exit temperature	Continuous	Every 15 minutes	Daily.
Vacuum level	Minimum vacuum level	Continuous	Every 15 minutes	Daily.
Wastewater inlet flow rate.	Maximum flow rate	Continuous	Every 15 minutes	Daily

[1] Steam to feed ratio is calculated based on the steam feed rate into the stripper and the wastewater flow rate into the stripper.

TABLE 7 TO SUBPART HHHHHHH OF PART 63—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-pentachlorodibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	0.01
octachlorodibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorodibenzofuran	0.1
2,3,4,7,8-pentachlorodibenzofuran	0.3
1,2,3,7,8-pentachlorodibenzofuran	0.03
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	0.01
octachlorodibenzofuran	0.0003

TABLE 8 TO SUBPART HHHHHHH OF PART 63—CALIBRATION AND ACCURACY REQUIREMENTS FOR CONTINUOUS PARAMETER MONITORING SYSTEMS

If you monitor this parameter . . .	Then your accuracy requirements are . . .	And your inspection/calibration frequency requirements are . . .
Temperature (non-cryogenic temperature ranges).	± 1 percent of temperature measured or 2.8 degrees Celsius (5 degrees Fahrenheit) whichever is greater.	Every 12 months.
Temperature (cryogenic temperature ranges)	± 2.5 percent of temperature measured or 2.8 degrees Celsius (5 degrees Fahrenheit) whichever is greater.	Every 12 months.

TABLE 8 TO SUBPART HHHHHHH OF PART 63—CALIBRATION AND ACCURACY REQUIREMENTS FOR CONTINUOUS PARAMETER MONITORING SYSTEMS—Continued

If you monitor this parameter . . .	Then your accuracy requirements are . . .	And your inspection/calibration frequency requirements are . . .
Liquid flow rate	± 2 percent of the normal range of flow	Every 12 months. You must select a measurement location where swirling flow or abnormal velocity distributions due to upstream and downstream disturbances at the point of measurement do not exist.
Gas flow rate	± 5 percent of the flow rate or 10 cubic feet per minute, whichever is greater.	Every 12 months Check all mechanical connections for leakage at least annually. At least annually, conduct a visual inspection of all components of the flow CPMS for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if your flow CPMS is not equipped with a redundant flow sensor.
pH or caustic strength	± 0.2 pH units	Every 8 hours of process operation check the pH or caustic strength meter's calibration on at least two points.
Conductivity	± 5 percent of normal range	Every 12 months.
Mass flow rate	± 5 percent of normal range	Every 12 months.
Pressure	± 5 percent or 0.12 kilopascals (0.5 inches of water column) whichever is greater.	Calibration is required every 12 months. Check all mechanical connections for leakage at least annually. At least annually perform a visual inspection of all components for integrity, oxidation and galvanic corrosion if CPMS is not equipped with a redundant pressure sensor.

TABLE 9 TO SUBPART HHHHHHH OF PART 63—METHODS AND PROCEDURES FOR CONDUCTING PERFORMANCE TESTS FOR PROCESS VENTS

For each control device used to meet the emission limit in Table 1 or 2 to this subpart for the following pollutant . . .	You must . . .	Using . . .
Total organic HAP	Measure the total hydrocarbon concentration at the outlet of the control device or in the stack.	Method 25A at 40 CFR part 60, appendix A. Conduct each test run for a minimum of 1 hour.
Vinyl chloride	Measure the vinyl chloride concentration at the outlet of the control device or in the stack.	Method 18 at 40 CFR part 60, appendix A–6. Conduct each test run for a minimum of 1 hour.
Hydrogen chloride	Measure hydrogen chloride concentrations at the outlet of the control device or in the stack.	Method 26 at 40 CFR part 60, appendix A–8, collect 60 dry standard liters of gas per test run; or Method 26A at 40 CFR part 60, appendix A–8, collect 1 dry standard cubic meter of gas per test run.
Dioxin/furan	Measure dioxin/furan concentrations on a toxic equivalency basis (and report total mass per isomer) at the outlet of the control device or in the stack.	Method 23 at 40 CFR part 60, appendix A–7 and collect 5 dry standard cubic meters of gas per test run.
Any pollutant from a continuous, batch, or combination of continuous and batch process vent(s).	Select sampling port locations and the number of traverse points.	Method 1 or 1A at 40 CFR part 60, appendix A–1.
	Determine gas velocity and volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G at 40 CFR part 60, appendix A–1 and A–2.
	Conduct gas molecular weight analysis and correct concentrations the specified percent oxygen in Table 1 or 2 to this subpart.	Method 3, 3A, or 3B at 40 CFR part 60, appendix A–2 using the same sampling site and time as HAP samples.
	Measure gas moisture content	Method 4 at 40 CFR part 60, appendix A–3.

TABLE 10 TO SUBPART HHHHHHH OF PART 63—METHODS AND PROCEDURES FOR CONDUCTING PERFORMANCE TESTS FOR STRIPPED RESIN AND WASTEWATER

For demonstrating . . .	For the following emission points and types of processes . . .	Collect samples according to the following schedule . . .		Using the following test methods . . .
		Vinyl chloride . . .	Total HAP . . .	
Each stripped resin stream				
Initial compliance	Continuous	During a 24 hour period, every 8 hours or for each grade, whichever is more frequent.	During a 24 hour period, 1 grab sample every 8 hours or for each grade, whichever is more frequent.	For vinyl chloride Method 107; and For total HAP, your proposed method as specified in § 63.11960(d)(2), incorporating Method 107 and Method 8260B.
	Batch	1 grab sample for each batch produced during a 24 hour period.	1 grab sample for each batch produced during a 24 hour period.	
Continuous compliance.	Continuous	On a daily basis, 1 grab sample every 8 hours or for each grade, whichever is more frequent.	On a monthly basis, 1 grab sample every 8 hours or for each grade, whichever is more frequent, during a 24 hour period.	
	Batch	On a daily basis, 1 grab sample for each batch produced during a 24 hour period.	On a monthly basis, 1 grab sample for each batch produced during a 24 hour period.	
Each wastewater stream				
Initial compliance	N/A	1 grab sample	If you are not required to use a treatment process, 1 grab sample; or. If you are required to use a treatment process, the sampling frequency specified in subpart G of this part, as referenced in § 63.11965(c)(1) through (4).	If you are not required to use a treatment process, for vinyl chloride Method 107; and For total HAP, your proposed method as specified in § 63.11980(a)(2),incorporating Methods 107, 305, and 8260B. For vinyl chloride, Method 107; or If you are required to use a treatment process, the test methods specified in subpart G of this part, as referenced in § 63.11965(c)(1) through (4).
Continuous compliance.	N/A	1 grab sample per month.	If you are not required to use a treatment process, 1 grab sample per month; or. If you are required to use a treatment process, the sampling frequency specified in subpart G of this part, as referenced in § 63.11965(c)(1) through (4).	

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